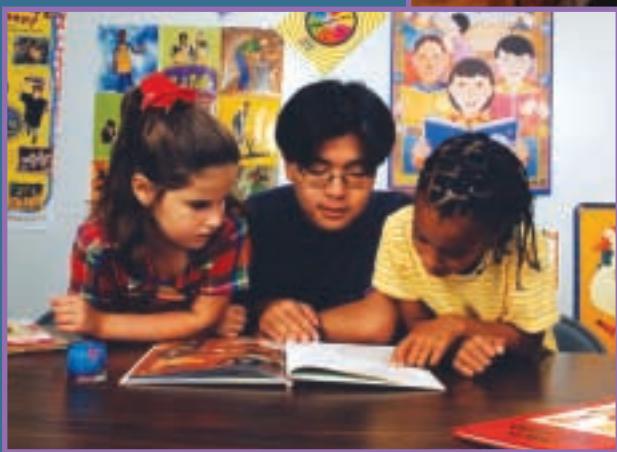
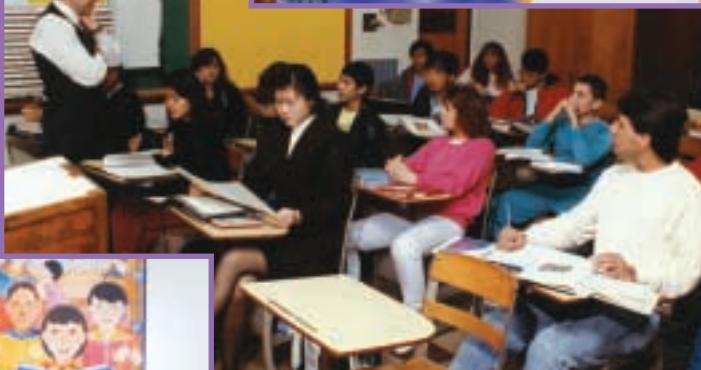
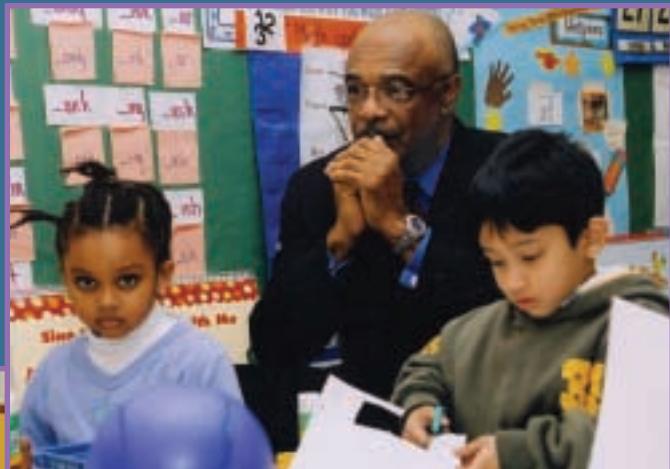
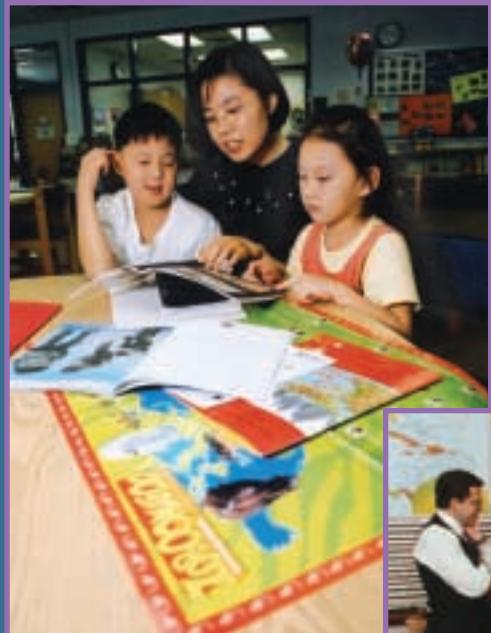


Meeting the Highly Qualified Teachers Challenge

The Secretary's Second Annual Report on Teacher Quality



U.S. Department of Education
Office of Postsecondary Education

2003

This report was produced under U.S. Department of Education Contract No. ED-00-CO-0016 with Westat. Philip Schulz served as the contracting officer's representative.

U.S. Department of Education

Rod Paige

Secretary

Office of Postsecondary Education

Sally L. Stroup

Assistant Secretary

Office of Policy Planning and Innovation

Jeffrey R. Andrade

Deputy Assistant Secretary

June 2003

This report is in the public domain. Authorization to reproduce it in whole or in part is granted. While permission to reprint this publication is not necessary, the citation should be: U.S. Department of Education, Office of Policy Planning and Innovation, *Meeting the Highly Qualified Teachers Challenge: The Secretary's Second Annual Report on Teacher Quality*, Washington, D.C., 2003

To order copies of this report, write:

ED Pubs

Editorial Publications Center

U. S. Department of Education

P.O. Box 1398

Jessup, MD 20794-1398;

Or via electronic mail, send your request to: edpubs@inet.ed.gov.

You may also call toll-free: 1-877-433-7827 (1-877-4-ED-PUBS). If 877 service is not yet available in your area, call 1-800-872-5327 (1-800-USA-LEARN). Those who use a telecommunications device for the deaf (TDD) or a teletypewriter (TTY), should call 1-800-437-0833.

To order online, point your Internet browser to: www.ed.gov/about/ordering.jsp.

This report is also available on the Department's web site at: <http://www.ed.gov/offices/OPE/News/teacherprep/index.html>

On request, this publication is available in alternative formats, such as Braille, large print, audiotape, or computer diskette. For more information, please contact the Department's Alternate Format Center (202) 205-8113.

A MESSAGE FROM THE SECRETARY OF EDUCATION

Just over a year ago, our nation embraced a historic challenge: to ensure that no child is left behind. I am pleased to report that America is keeping its commitment. As President Bush said, in celebrating the first anniversary of the *No Child Left Behind Act* (NCLB), "We can say that the work of reform is well begun."

I applaud the unprecedented bipartisan cooperation and dedication of state officials, administrators, and teachers across the country now working hard to strengthen their accountability systems, identify research-based strategies for improving student achievement, and offering new choices to parents whose children attend schools in need of improvement. The president's budget is supporting these efforts by providing a historic level of funding for elementary and secondary education.

One of the most important provisions of the *No Child Left Behind Act* is a requirement that, by the end of school year 2005-2006, all teachers of core academic subjects must be "highly qualified." This nation has many great teachers, but not nearly enough. To meet this challenge, all of us in the education system must do things differently. We must be innovative—not just in theory, but in practice. This is especially true for states, which now have the key responsibility of implementing NCLB. As discussed in last year's report, when it comes to recruiting and preparing future teachers, the two key principles are:

- raising academic standards for teachers and
- lowering barriers that are keeping many talented people out of the teaching profession.

This publication provides a progress report on how the states are doing at putting these two principles into action. It also builds on last year's recommendations—and the excellent work taking place around the nation—to suggest specific, innovative reforms that show promise in boosting teacher quality and meeting the requirements of NCLB. A special focus is placed on efforts to improve teacher preparation programs, which play an essential role in preparing many of the nation's teachers.

This report and the information provided on an accompanying Web site (www.title2.org) meet the requirements of Title II of the *Higher Education Act*, which created a national reporting system on the quality of teacher preparation. It provides a wealth of useful information on teacher quality in the United States. I hope it also serves as a helpful guide as states, school districts, institutions of higher education and others continue their work on reaching our common goal: a highly qualified teacher in every classroom, leaving no child behind.



Rod Paige

CONTENTS

A Message from U.S. Secretary of Education Rod Paige	iii
Section One: The Quest for Highly Qualified Teachers: A Progress Report	1
Introduction	1
The Research on Teacher Quality	2
The Need for Continued Research on Teacher Quality	3
The “Highly Qualified Teachers” Requirements	3
High Standards and “Highly Qualified Teachers”	5
Low Barriers and “Highly Qualified Teachers”	5
Higher Standards and Lower Barriers: An Update	6
Section Two: Promising Innovations to Meet the Highly Qualified Teachers Challenge	21
Introduction	21
Innovations in Traditional Teacher Preparation	21
West Virginia University’s Benedum Collaborative	22
UTeach (Natural Sciences) at the University of Texas at Austin	22
Standards-Based Teacher Education Project (STEP)	24
Innovative Alternative Routes to Teaching	24
American Board for Certification of Teacher Excellence	26
California’s Technology to Teachers Program	27
New York City Teaching Fellows	28
Western Governors University	29
Teach For America Program	30
Transition to Teaching Partnership	31
Section Three: Continuing the Critical Work of Teacher Quality Reform	33
Conclusion	34
References	35
Appendix A: Scientifically Based Research on Teacher Quality: Research on Teacher Preparation and Professional Development	39
Appendix B: Overview of the No Child Left Behind Act, Public Law 107-110, Section 9101(23).	55
Appendix C: Issues in Implementing Title II Requirements for Data Collection and Reporting	57
Appendix D: Data Tables	63

TABLES

Table 1. Requirements for initial teaching certification or licensure, by state: 2002	12
Appendix D1: Summary of regular route pass rates: 2000-2001	64
Appendix D2: Classroom teachers on waivers, overall and by poverty status of district, by state: 2001-2002	70
Appendix D3: Classroom teachers on waivers, by selected subject areas, by state: 2001-2002	72
Appendix D4: Summary of alternative route pass rates: 2000-2001	76
Appendix D5: Number of institutions of higher education, per alternative route: 2002	80
Appendix D6: Characteristics of alternative routes, by route within state: 2000-2001	82
Appendix D7: Institutions identified as at-risk of being classified as low-performing or identified as low performing: 2002	88

FIGURES

Figure 1: Number of states that have or are in the process of implementing policy that links teacher certification and student content standards, by state: 2002	8
Figure 2: Requirement for a subject area bachelor's degree for at least one initial certificate, by state: 2002	9
Figure 3: Summary pass rates by state and testing company: 2000-2001	10
Figure 4: Percent of highly qualified public secondary school teachers, by subject area: 1999-2000	11
Figure 5: State minimum passing scores, preprofessional skills test: reading, 2000-2001	15
Figure 6: State minimum passing scores, preprofessional skills test: mathematics, 2000-2001	16
Figure 7: State minimum passing scores, preprofessional skills test: writing, 2000-2001	17
Figure 8: Percentage of teachers on waivers: 2001-2002	18
Figure 9: Percentage of teachers on waivers by poverty status of district: 2001-2002	19
Figure 10: Percentage of teachers on waivers with content expertise, by poverty status of district: 2001-2002	19
Figure 11: Percentage of teachers on waivers by subject: 2001-2002	20
Figure 12: Percentage of teachers on waivers with content expertise, by subject: 2001-2002	20
Figure 13: States with alternative routes to certification: 2002	25

SECTION ONE:

The Quest for Highly Qualified Teachers: A Progress Report



INTRODUCTION

Under the 1998 reauthorization of Title II of the Higher Education Act, the U.S. Secretary of Education is required to issue annual reports to Congress on the state of teacher quality nationwide. Meeting the Highly Qualified Teachers Challenge 2003 is the second annual report on this important issue. The 1998 reauthorization also established a reporting system for states and institutions of higher education to collect information on the quality of their teacher training programs. Data collected under the Title II reporting system are available at www.title2.org and include information on state teacher certification requirements, the performance of prospective teachers on state licensure tests and the number of teachers hired on temporary or emergency certificates.

Last year's inaugural annual report on teacher quality addressed the limitations of the present system for recruiting and licensing teachers. In brief, the current system dissuades many high-achieving college students and mid-career professionals from entering the teaching profession because it places unnecessary obstacles in their path. At the same time, its academic standards for new teachers are generally much too modest. The secretary's 2002 report outlined a bold new approach for unlocking the doors of the teaching profession to qualified, talented individuals built on two principles:

- Raising academic standards for teachers and
- Lowering barriers that keep many talented individuals out of the teaching profession.

Last year's report stated that these principles draw their support from two directions: first, from the best available research on teacher quality; and second, from the requirements of the No Child Left Behind Act.

THE RESEARCH ON TEACHER QUALITY

There is a wide consensus among researchers and policy makers that teacher quality is a key component of school quality—perhaps the key component (Scheerens and Bosker, 1997; Wright, et. al, 1997; Sanders and Rivers, 1996; Sanders and Horn, 1995, Sanders, et.al, 1998; Saunders and Topping, 1999). Some of the most compelling recent research on this front has come from William Sanders, director of SAS InSchool's assessment division, who has used Tennessee's rich source of annual student achievement data to examine the impact of teachers on their classrooms' academic progress over the course of a year. This "value added" approach allowed him to discover that individual teachers make an enormous difference in student achievement (Sanders and Rivers, 1996).

There is consistent evidence that individual teachers contribute to student achievement. However, there is less information about the specific teacher attributes that lead to increased student achievement. In other words, how would you know a high-quality teacher if you saw one (other than looking at the achievement of his or her students)? What traits or credentials are related to increases in student achievement? The teacher's general intelligence? The teacher's subject matter knowledge? Full certification? Experience? Master's degrees? Here, the research is much less compelling, but a fair reading of the most rigorous research shows the following:

- Teachers' general cognitive ability is the attribute studied in the literature that is most strongly correlated with effectiveness (Murnane, 1991, Greenwald, Hedges and Laine, 1996; Ferguson and Ladd, 1996, Henke, et. al, 1996; Kain and Singleton, 1996; Ehrenberg and Brewer, 1994).
- There is also evidence that teacher experience and content knowledge are linked to gains in student achievement (Monk, 1994, Monk and King, 1994; Greenwald, Hedges and Laine, 1996; Rowan, Chiang and Miller, 1997; Goldhaber and Brewer, 2000; Rowan 2002).
- Training in pedagogy, the amount of time spent practice teaching and master's degrees have yet to be linked to increases in student achievement (Goldhaber and Brewer, 1996; Monk, 1994; Chaney, 1995).
- There is little compelling evidence that certification requirements, as currently structured in most states, are related to teacher effectiveness (Miller, McKenna, and McKenna, 1998; Goldhaber and Brewer, 2000).

It is important to point out a caveat. Neither last year's report nor the present report contend that attributes like training in pedagogy or time spent in the field practice teaching are not valuable. All the reports suggest is that the evidence linking these attributes to increases in student achievement is weak, and certainly not as strong as the evidence linking general cognitive ability, experience and content knowledge to teacher effectiveness.

The Need for Continued Research on Teacher Quality

While it is important to glean from existing research all that we can to improve teacher quality today, we should not rest on our journey toward a better understanding of the key components of teacher preparation. There are significant gaps in our knowledge of how one becomes an effective teacher.

In his remarks at the White House Conference on Preparing Tomorrow's Teachers, Grover Whitehurst (2002), director of the Department's Institute of Education Sciences, stated, "Research on teacher preparation and professional development is a long way from the stage of converging evidence and professional consensus." Whitehurst noted throughout his discussion that much of the research on teacher quality is dated, methodologically flawed, correlational in nature, and focuses on differences among teachers rather than the interventions that raise effectiveness for all teachers. He encouraged the field to employ experimental designs in the study of teacher effectiveness. (See Appendix A for a transcript of Whitehurst's remarks.)

THE "HIGHLY QUALIFIED TEACHERS" REQUIREMENTS

The teacher quality requirements in No Child Left Behind are well aligned with the existing research and the "high standards, low barriers" formulation. It is worth reviewing the "highly qualified teachers" provisions of the statute, especially since the Department has issued regulations and policy guidance on these provisions since last year's report (U.S. Department of Education, December 2, 2002 and December 19, 2002).

At about the same time the secretary's report was released, the Department began implementing NCLB. NCLB is the most significant shift in federal education policy since its predecessor, the original Elementary and Secondary Education Act of 1965, which created the federal Title I program. NCLB has sparked a reform movement that reaches well beyond elementary and secondary education. By recognizing the link between quality teaching and student achievement, NCLB has refocused the national dialogue on how teachers should be trained and certified as well as who should teach.

Specifically, NCLB requires that all teachers in core academic areas be "highly qualified" not later than the end of the 2005-06 school year. For schools receiving Title I funds for the education of disadvantaged children, the issue is even more pressing: newly hired teachers in core academic subjects must already be in accord with Congress's definition of highly qualified teachers prior to entering the classroom (see Appendix B for the full text of NCLB's highly qualified teacher provisions). The core academic subjects are defined as English, reading or language arts, mathematics, science, foreign language, civics and government, economics, arts, history and geography.

Under the terms of NCLB, to be highly qualified teachers must: hold at least a bachelor's degree from a four-year institution; hold full state certification; and demonstrate competence in their subject area. Newly hired elementary school teachers working in core academic areas must pass a rigorous state test of subject knowledge and teaching skills in reading/language arts, writing, math and other areas of the basic elementary curriculum. Newly hired middle school and high school teachers in core academic areas can demonstrate their subject-matter competence by passing a rigorous exam of their content knowledge; majoring in their subject as an undergraduate; earning a graduate degree in their subject; accumulating the coursework equivalent to an undergraduate major; or attaining an advanced certificate or credential.

Veteran middle school and high school teachers also must demonstrate subject matter competence. They can do so by passing assessments or obtaining a degree in their subject area or by meeting a high, objective, uniform state standard of evaluation (or Housse). Such a standard must:

- Be set by the state for both grade-appropriate academic subject-matter knowledge and teaching skills;
- Be aligned with challenging state academic standards and developed in consultation with core content specialists, teachers, principals and school administrators;
- Provide objective, coherent information about the teacher's attainment of core content knowledge in the academic subjects in which a teacher teaches;
- Be applied uniformly to all teachers in the same academic subject and the same grade level throughout the state;
- Take into consideration, but not be based primarily on, the time the teacher has been teaching in the academic subject;
- Be made available to the public upon request; and
- May involve multiple objective measures of teacher competency.

NCLB also includes important new reporting requirements related to teachers. At the beginning of each school year, school districts that receive Title I funding must notify parents of students in Title I schools that they are entitled to receive information on the qualifications of their children's teachers, such as their teachers' college majors and whether they have had any licensing criteria waived. In addition, Title I schools must notify parents if their child has been assigned to a teacher who is not highly qualified or if their child has been taught for four or more consecutive weeks by such a teacher. States must develop plans showing how they will achieve the goal of having all teachers highly qualified by the end of the 2005-2006 school year, with measurable objectives and milestones along the way.

High Standards and “Highly Qualified Teachers”

NCLB is explicit when it comes to defining how teachers can demonstrate their subject matter competence. The law reflects research findings that teachers’ content knowledge is important. The law also reflects concern that state certification requirements around subject matter mastery, such as cut-scores on certification exams, were not rigorous enough. NCLB will hopefully cause states to tighten up their subject matter requirements, rather than be persuaded to bend to pressure to lower their academic standards for their teachers.

Low Barriers and “Highly Qualified Teachers”

The reader may have noticed that the law was markedly less explicit about what it means to have full state certification. In fact, both the statute and the Department’s regulations are silent on the issue.

States have flexibility, then, to use this opportunity to think anew about their certification systems, and to consider major revisions to existing systems. If states want to, they can dramatically streamline their processes and create alternative routes to full state certification that target talented people who would be turned off by traditional preparation and certification programs. In other words, NCLB gives the green light to states that want to lower barriers to the teaching profession.

For example, states could adopt the new system being created by the American Board for Certification of Teacher Excellence (ABCTE), an organization supported by a Department of Education grant. ABCTE is creating a rigorous assessment system for new teachers in both content areas and professional teaching knowledge.

States could decide that individuals who pass the relevant sections of the American Board assessment would be considered fully certified to teach, regardless of where they learned the important knowledge and skills that were tested. These teachers could thus be considered “highly qualified” under the law. More information about the ABCTE is provided in Section Two.

But what about programs that allow teachers to gain certification while on the job? Unlike the example given above, these teachers would not be fully certified when they step into the classroom on the first day of school. Can teachers in these alternative programs be considered “highly qualified”? NCLB states that teachers on emergency certificates or temporary waivers are not highly qualified. However, many states place individuals pursuing an alternative route to certification on waivers or emergency licenses until they

complete all requirements for an initial certificate. Unlike most traditional route completers, alternative route participants typically are assigned to classrooms as the teacher of record while they complete their training, coursework, and/or testing requirements.

Because alternative route teachers often come to the classroom with content knowledge and life experience, and because the law was careful about mentioning alternative routes as a legitimate route to certification, the Department issued guidance allowing them to be considered highly qualified so long as they were participating in a qualifying alternative route program while teaching. The regulations define qualified alternative programs as those in which the teacher:

- Receives high-quality professional development that is sustained, intensive and classroom focused;
- Participates in a program of intensive supervision that consists of structured guidance and regular ongoing support for teachers or a teacher mentoring program;
- Assumes functions as a teacher for up to a period of no longer than three years; and
- Demonstrates satisfactory progress toward full state certification (U.S. Department of Education, December 2, 2002).

These regulations give states the opportunity to create high-quality alternative certification programs, while guarding against the possibility that teachers currently on waivers are re-labeled as “alternative certification” teachers. In other words, these regulations promote higher standards and lower barriers.

HIGHER STANDARDS AND LOWER BARRIERS: AN UPDATE

Are states making progress in raising academic standards for teachers while lowering unnecessary barriers? Data from the October 2002 State Title II Reports show there are positive developments. For example:

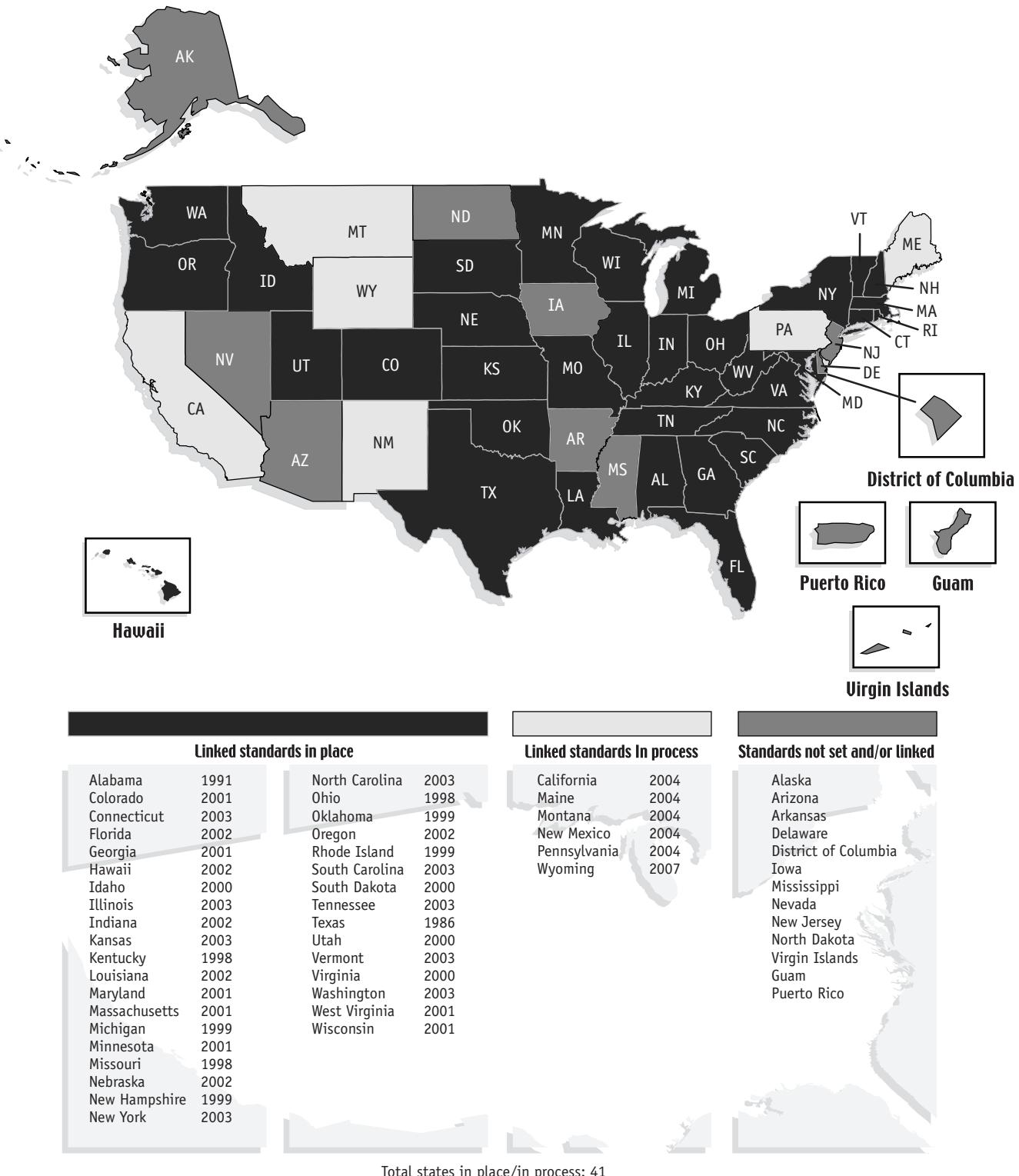
- As of October 2002, a total of 35 states had developed and linked teacher certification requirements to student content standards. Another six states are in the process of linking such standards (U.S. Department of Education, November 2002). (Figure 1)
- Thirty-five states require prospective teachers to hold a subject area bachelor's degree for initial certification (U.S. Department of Education, November 2002). (Figure 2)
- All but eight states require statewide assessments for beginning teachers and 32 states require teaching candidates to pass a test in at least one academic content area. The majority of teachers who complete their preparation programs pass the state assessments. The aggregate pass rate for all assessments was 93 percent for completers in

2000-2001. Summary pass rates ranged from 79 percent of completers in the District of Columbia to 100 percent in Arkansas, Michigan, Montana, Oregon and West Virginia (U.S. Department of Education, November 2002). (Figure 3 and Appendix Table D1)

Other indicators suggest that, although states have until the end of the 2005-2006 school year, areas of potential concern still exist. Consider the following:

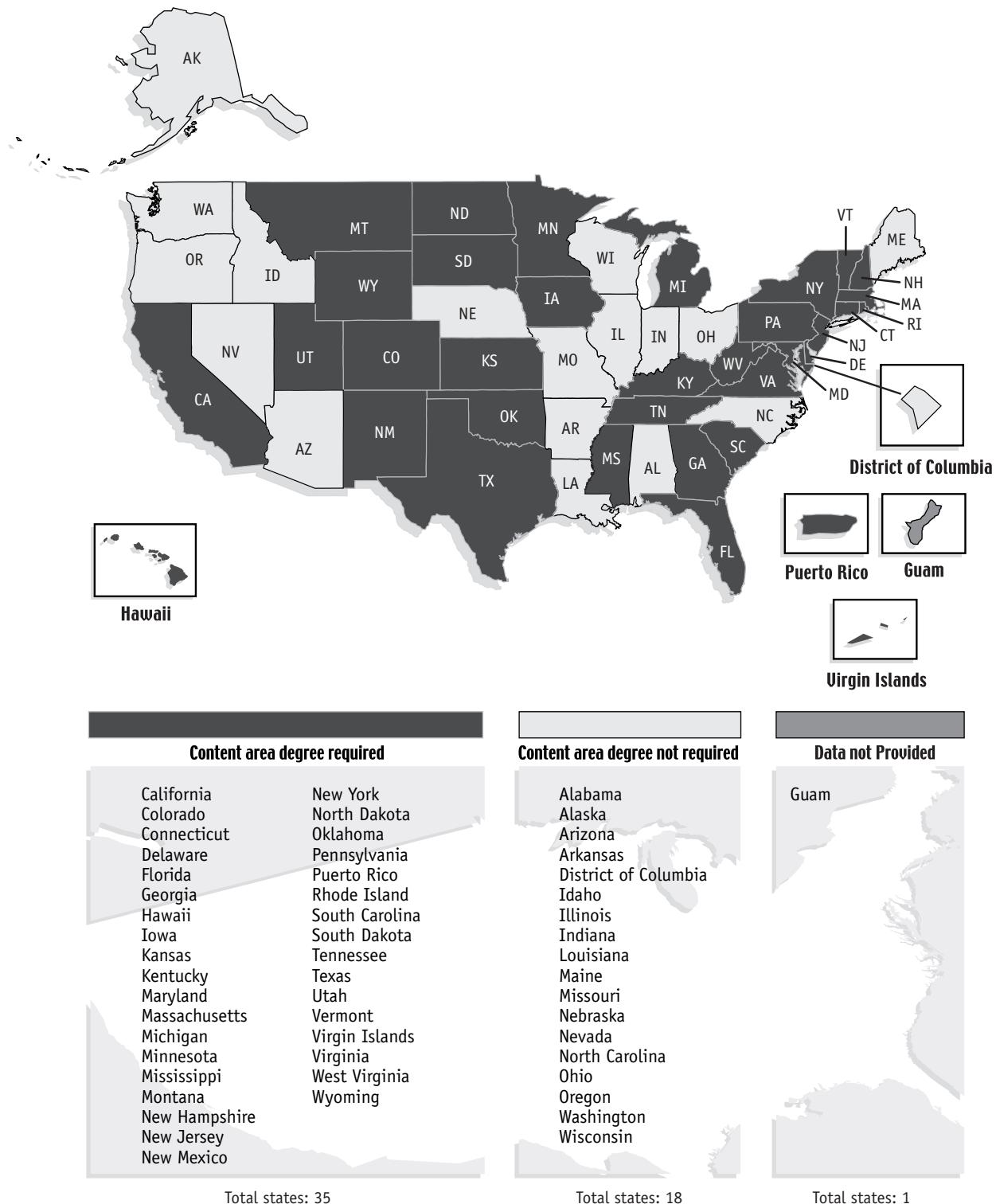
- According to a special analysis of the Schools and Staffing Survey conducted by the U.S. Department of Education, using an approximation of the NCLB definition, only 54 percent of our nation's secondary teachers were highly qualified during the 1999-2000 school year. The percentage of highly qualified teachers ranged from 47 percent of mathematics teachers to 55 percent of science and social science teachers. These data suggest that out-of-field teaching is a serious problem across the country (Policy and Program Study Service, 2003). (Figure 4)
- As Table 1 shows, many state regulations for certifying new teachers are burdensome and bureaucratic. State regulations set forth a multitude of conditions including academic coursework, pedagogical coursework, minimum grade-point averages, student teaching and passing a variety of assessments that must be met before a person can enter a classroom. (Table 1)
- NCLB requires that new teachers demonstrate competency in their subject areas to be considered highly qualified. In 2000-01, a total of 32 states required teacher candidates to undergo academic content assessment for certification or licensure. States often require teachers applying for licensure to take a battery of assessments to measure a range of knowledge and skills. For example, 22 states administer basic skills tests along with academic content assessments. While state movement toward adopting teacher licensure assessments is positive, passing (or cut scores) on assessments tend to be low. A review of data for states using the Educational Testing Service's assessments found that the passing scores on the basic skill examination are set below the national median in all states except Virginia (in writing) (U.S. Department of Education, November 2002). (Figures 5, 6, and 7)
- Nationwide, approximately 6 percent of the teaching force lacked full certification in 2001-02—the same percentage as was reported last year. Seven states report having more than 10 percent of their teachers on waivers (teaching with emergency, temporary or provisional licenses) during that school year. High-poverty school districts were more likely to employ teachers on waivers than affluent districts, averaging eight percent in the 2001-02 school year compared with five percent in other districts. Teachers lacking full certification are not evenly distributed across subject areas, ranging from eight percent for special education and career/technical education teachers to four percent for art and elementary education teachers (U.S. Department of Education, November 2002). (Figures 8, 9, 10, 11, 12 and Appendix Tables D2 and D3)

FIGURE 1: NUMBER OF STATES THAT HAVE OR ARE IN THE PROCESS OF IMPLEMENTING POLICY THAT LINKS TEACHER CERTIFICATION AND STUDENT CONTENT STANDARDS, BY STATE: 2002



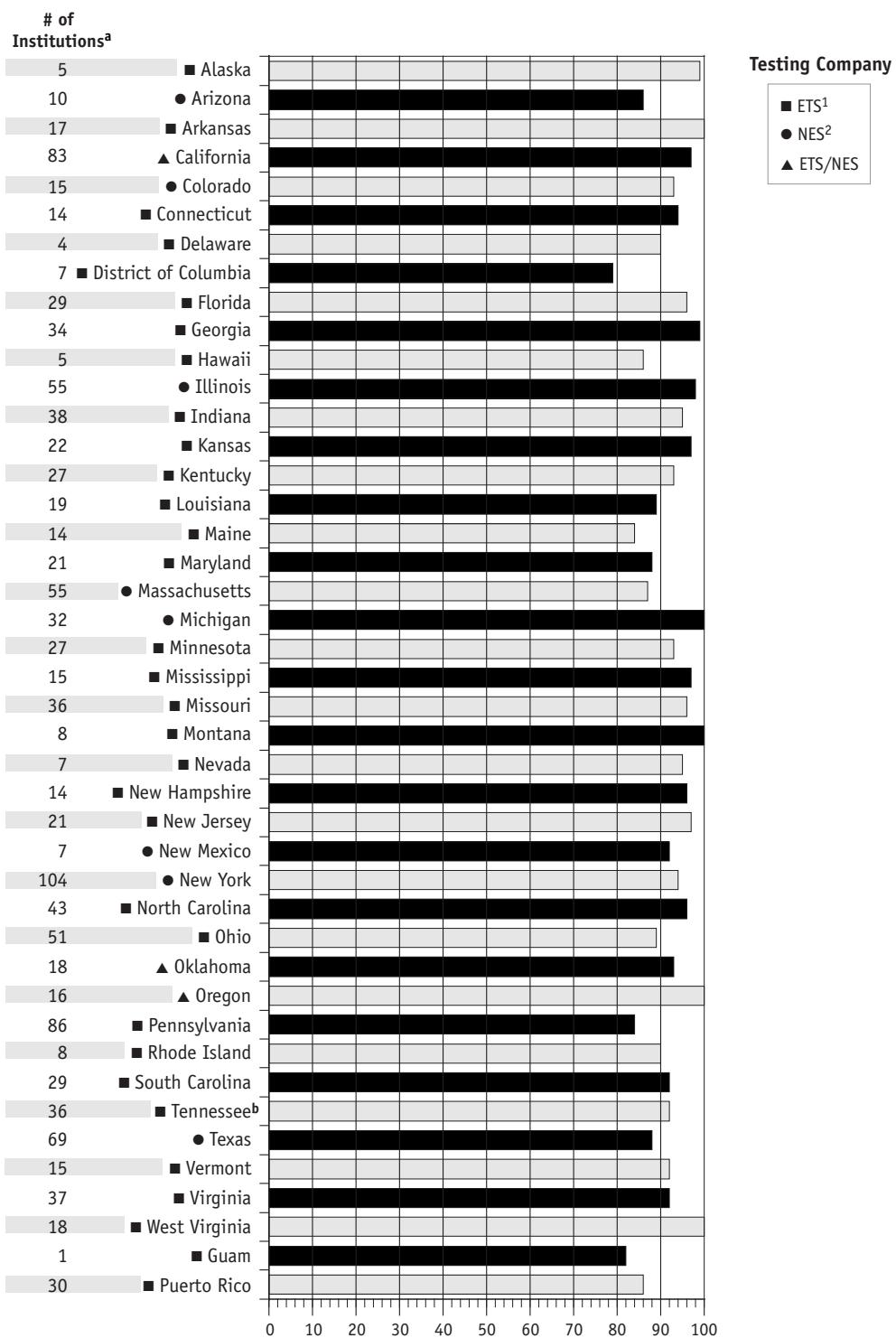
Source: Title II Data Collection—State Reports, 2002.

**FIGURE 2: REQUIREMENT FOR A SUBJECT AREA BACHELOR'S DEGREE FOR AT LEAST ONE INITIAL CERTIFICATE,
BY STATE: 2002**



Source: Title II Data Collection—State Reports, 2002.

FIGURE 3: SUMMARY PASS RATES, BY STATE AND TESTING COMPANY: 2000-2001



¹ Educational Testing Service (ETS)

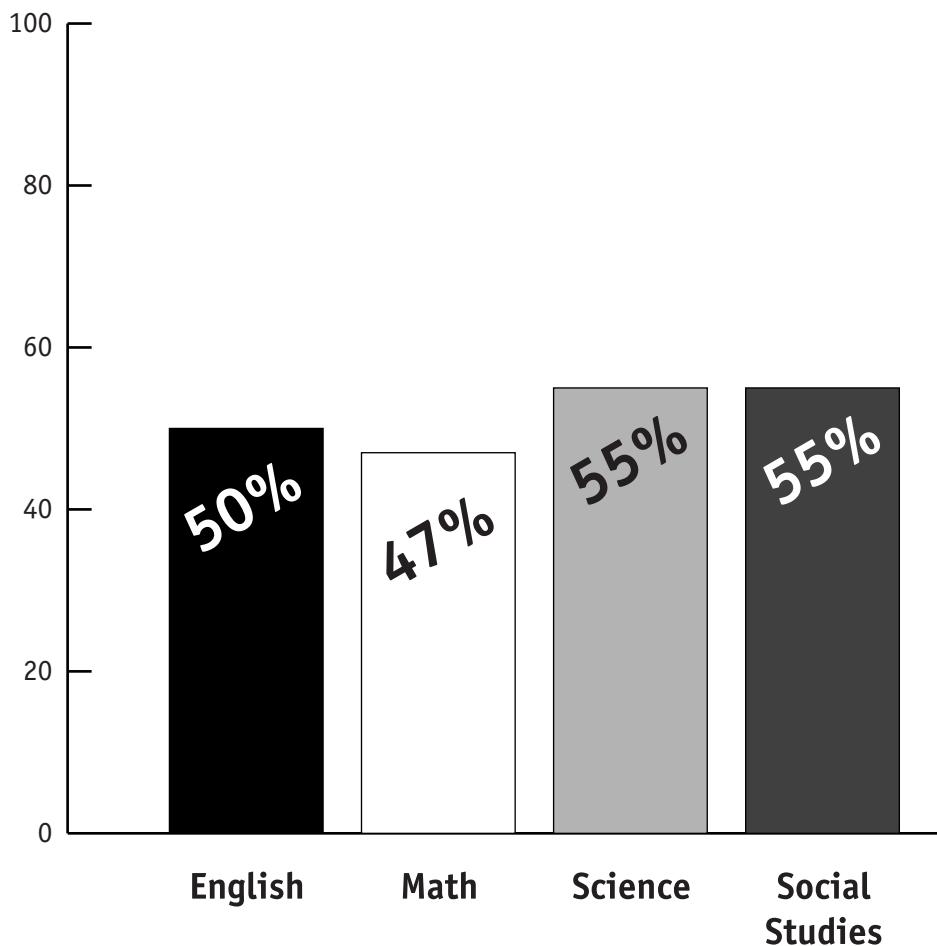
² National Evaluation Systems (NES)

^a Number of institutions includes institutions with one or more completers.

^b Number of institutions includes only institutions with 10 or more completers.

Source: Title II Data Collection—State Reports, 2002.

FIGURE 4: PERCENT OF HIGHLY QUALIFIED PUBLIC SECONDARY SCHOOL TEACHERS, BY SUBJECT AREA : 1999-2000



Notes: The term “highly qualified” includes those teachers who have at least a bachelor’s degree, state teacher certification, and a major in all fields taught. The term “core subject areas” includes English/language arts, mathematics, science and social studies; for elementary school teachers, it also includes general elementary education. This measure is an approximation of the highly qualified teacher definition. It does not allow for HOUSSE, for example.

Source: Program and Policy Studies Service. (2003). Special analysis of the National Center for Education Statistic's Schools and Staffing Survey, 1999-20000. Unpublished tabulations. U.S. Department of Education.



TABLE 1. REQUIREMENTS FOR INITIAL TEACHING CERTIFICATION OR LICENSURE, BY STATE: 2002

State	Initial Certificate Name	Subject Area Bachelor's	Pedagogy Courses Required	Other Prescribed Coursework	Credit Hour Requirement	Minimum Grade Point Average	Recency of Credit Requirements	Practicum or Student Teaching	Assessments
Alabama	Class B Professional Educator		✓	✓		✓		✓	✓
	Class A Professional Educator		✓	✓		✓		✓	✓
Alaska	Type A Regular Teacher Certificate			✓			✓	✓	✓
Arizona	Provisional License (K-8, 7-12, Special Education K-12)	✓		✓	✓			✓	✓
	Standard License (K-8, 7-12, Special Education K-12)			✓					
Arkansas	Initial Teaching License		✓			✓		✓	✓
	Standard Teaching License		✓					✓	✓
California	Preliminary Level I Education	✓	✓		✓	✓	✓	✓	✓
	Specialist Instruction Credential								
	Preliminary Multiple Subject Teaching Credential	✓	✓		✓	✓	✓	✓	✓
	Preliminary Single Subject Teaching Credential	✓	✓		✓	✓	✓	✓	✓
	Professional Clear Level II Ed.	✓	✓	✓	✓	✓	✓	✓	✓
	Specialist Instruction Credential								
	Professional Clear Multiple Subject Teaching Credential	✓	✓	✓	✓	✓	✓	✓	✓
	Professional Clear Single Subject Teaching Credential	✓	✓	✓	✓	✓	✓	✓	✓
Colorado	Provisional License	✓	✓	✓				✓	✓
	Professional License	✓				✓			
Connecticut	Initial Educator and Interim Initial Educator Certificate	✓	✓	✓	✓			✓	✓
	Interim Provisional Educator Certificate	✓	✓	✓	✓			✓	✓
	Provisional Educator Certificate	✓	✓	✓	✓			✓	✓
Delaware	Initial License	✓	✓	✓		✓		✓	✓
	Continuing License	✓	✓		✓	✓	✓	✓	
District of Columbia	Provisional Certificate								
	Standard Certificate		✓	✓	✓			✓	✓
Florida	Temporary Certificate	✓		✓	✓	✓			
Georgia	Intern Certificate	✓	✓	✓		✓	✓	✓	✓
	Professional Clear Renewable Certificate	✓	✓	✓	✓	✓	✓	✓	✓
	Provisional Certificate	✓		✓		✓		✓	✓
Guam	Professional I					✓		✓	✓
	Professional II								
Hawaii	Hawaii Teaching License		✓	✓				✓	✓
Idaho	Standard Certificate (K-8, 6-12, Special Education K-12, Early Childhood/Special Education Blended Birth-Gr. 3)		✓	✓	✓		✓	✓	

TABLE 1. REQUIREMENTS FOR INITIAL TEACHING CERTIFICATION OR LICENSURE, BY STATE: 2002 CONTINUED

State	Initial Certificate Name	Subject Area Bachelor's	Pedagogy Courses Required	Other Prescribed Coursework	Credit Hour Requirement	Minimum Grade Point Average	Recency of Credit Requirements	Practicum or Student Teaching	Assessments
Illinois	Initial License (Birth to Gr. 3, K-9, 6-12, Special Education K-12)		✓		✓			✓	✓
	Standard License (Birth-Gr. 3, K-9, 6-12, Special Education K-12)		✓		✓			✓	
Indiana	Standard License (K-12, Early childhood, 1-6, 5-9, K-3, 9-12, 5-12)		✓	✓	✓	✓	✓	✓	✓
Iowa	Initial License	✓	✓	✓				✓	✓
	Standard License	✓	✓	✓				✓	
Kansas	Standard 3-Year Certificate	✓	✓	✓		✓	✓	✓	✓
Kentucky	Provisional Certificate (Intern)	✓						✓	✓
	Professional Certificate (at baccalaureate level)	✓			✓	✓	✓		
Louisiana	Type C or Level 1 Certificate		✓	✓	✓	✓	✓	✓	✓
	Type B or Level 2 Certificate				✓			✓	
Maine	Provisional Certificate		✓	✓	✓			✓	✓
	Professional Certificate		✓	✓	✓			✓	
Maryland	Professional Eligibility Certificate		✓	✓	✓		✓	✓	✓
	Standard Professional Certificate I		✓	✓	✓			✓	
	Standard Professional Certificate II		✓	✓	✓			✓	
Massachusetts	Initial License	✓	✓					✓	✓
Michigan	Provisional Certificate	✓	✓			✓	✓	✓	
Minnesota	Nonrenewable License (temporary limited license)	✓	✓			✓	✓	✓	✓
	Professional License	✓	✓					✓	
Mississippi	Class A	✓	✓	✓	✓	✓	✓	✓	✓
	Class AA	✓	✓			✓	✓	✓	
	Class AAA	✓	✓					✓	
Missouri	Professional Classification I (PC1)		✓	✓	✓	✓	✓	✓	✓
Montana	Class 2 Standard Teaching License: Elementary		✓	✓	✓		✓	✓	✓
	Class 2 Standard Teaching License: Secondary		✓	✓			✓	✓	
	Class 7 American Indian Language and Culture							✓	
Nebraska	Temporary Certificate				✓	✓	✓	✓	✓
	Initial Certificate				✓	✓		✓	
Nevada	Initial License					✓	✓	✓	✓
New Hampshire	Beginning Educator Credential (BEC)							✓	
New Jersey	Certificate of Eligibility (CE)	✓	✓		✓	✓	✓	✓	✓
	Certificate of Eligibility with Advanced Standing (CEAS)	✓	✓						
New Mexico	Level 1	✓	✓	✓	✓	✓	✓	✓	✓



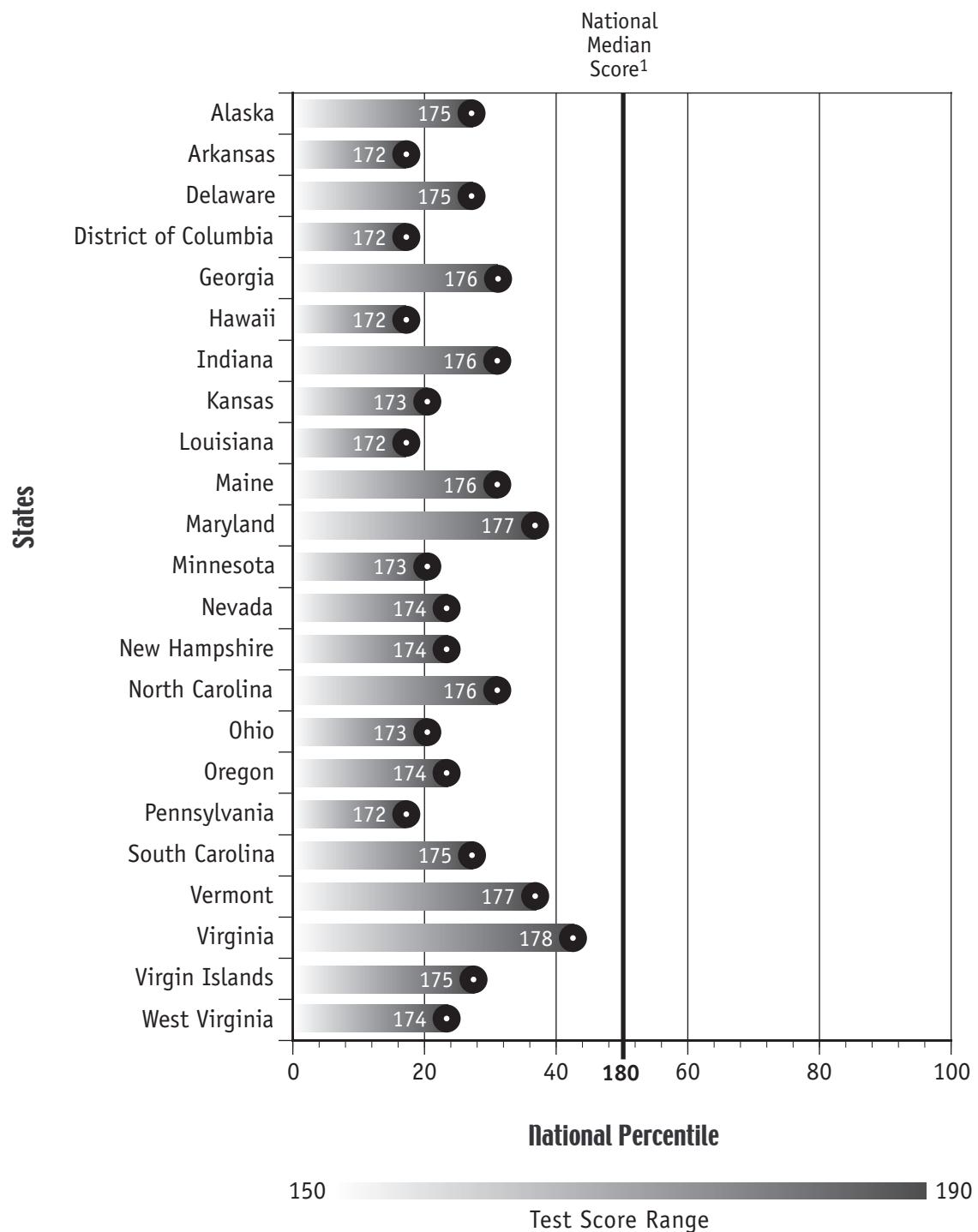
TABLE 1. REQUIREMENTS FOR INITIAL TEACHING CERTIFICATION OR LICENSURE, BY STATE: 2002 CONTINUED

State	Initial Certificate Name	Subject Area Bachelor's	Pedagogy Courses Required	Other Prescribed Coursework	Credit Hour Requirement	Minimum Grade Point Average	Recency of Credit Requirements	Practicum or Student Teaching	Assessments
New York	Provisional License (Elementary PK-6, Secondary Academic 7-12)	✓	✓	✓	✓			✓	✓
North Carolina	Initial License					✓	✓	✓	✓
North Dakota	Initial and Interim Reciprocal	✓	✓		✓	✓		✓	✓
Ohio	Provisional License		✓	✓		✓		✓	✓
Oklahoma	School License	✓	✓	✓	✓	✓	✓	✓	✓
Oregon	Transitional Teaching License		✓				✓	✓	
	Initial Teaching License		✓	✓			✓	✓	✓
Pennsylvania	Professional Instructional Certificate	✓	✓	✓		✓		✓	✓
Puerto Rico	Certificado Regular	✓			✓	✓			✓
Rhode Island	Provisional Certificate	✓	✓	✓	✓		✓	✓	✓
South Carolina	Critical Needs	✓	✓	✓	✓		✓		✓
	Initial	✓	✓		✓	✓		✓	✓
South Dakota	Two-Year nonrenewable Certificate	✓	✓	✓		✓	✓	✓	
	Five-Year Certificate	✓	✓	✓		✓	✓	✓	
Tennessee	Apprentice Teacher License	✓	✓	✓		✓		✓	✓
	Out-of-State Teacher License								✓
Texas	Texas Standard Classroom Teacher Certificate	✓	✓	✓				✓	✓
Utah	Utah Professional Educator License, Level I	✓	✓	✓			✓	✓	
Vermont	Level I - Beginning Educator License	✓				✓	✓	✓	✓
Virgin Islands	Emergency								
	General	✓	✓		✓			✓	✓
	Temporary	✓							
Virginia	Provisional License	✓	✓		✓			✓	✓
	Collegiate Professional License	✓	✓		✓	✓	✓	✓	✓
Washington	Residency Certificate		✓					✓	✓
West Virginia	Provisional Professional Certificate - 3 Years	✓	✓	✓		✓		✓	✓
Wisconsin	Two Year Minor Deficiency License (out-of-state applicants only)		✓	✓	✓	✓	✓	✓	✓
	Regular License		✓	✓	✓	✓	✓	✓	✓
Wyoming	Standard Teaching Certificate	✓	✓	✓				✓	✓

Note: This table includes Type A and Type B initial certificates. Type C certificates were excluded.

Source: Title II Data Collection—State Reports, 2002

FIGURE 5: STATE MINIMUM PASSING SCORES, PREPROFESSIONAL SKILLS TEST: READING, 2000-2001

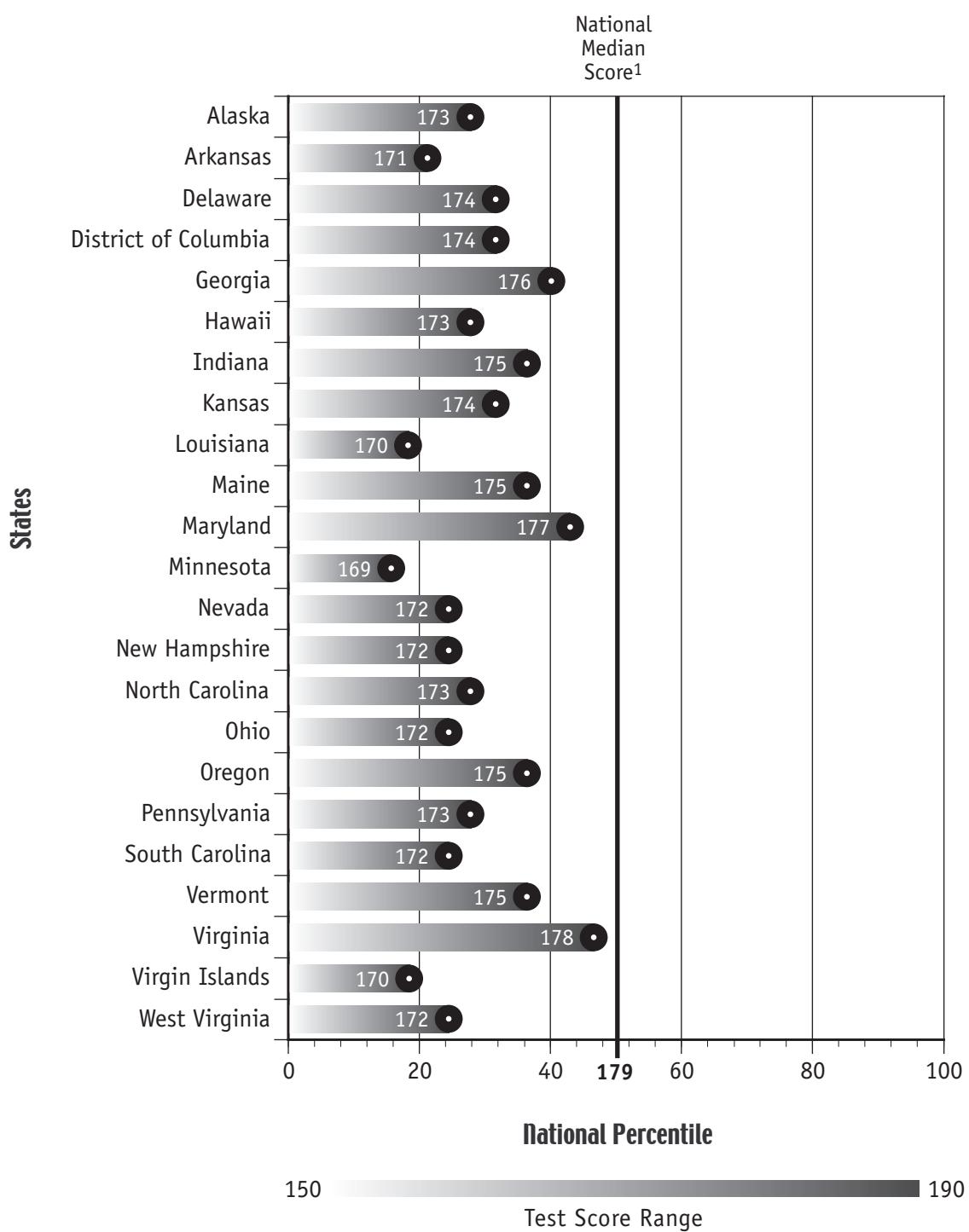


¹ National median score is defined by the score realized by the 50th percentile test taker.

Note: States not listed did not participate in Praxis Pre-Professional Skills Testing Program in 2000-2001.

Sources: Title II Data Collection—State Reports, 2002; Educational Testing Service.

FIGURE 6: STATE MINIMUM PASSING SCORES, PREPROFESSIONAL SKILLS TEST: MATHEMATICS, 2000-2001

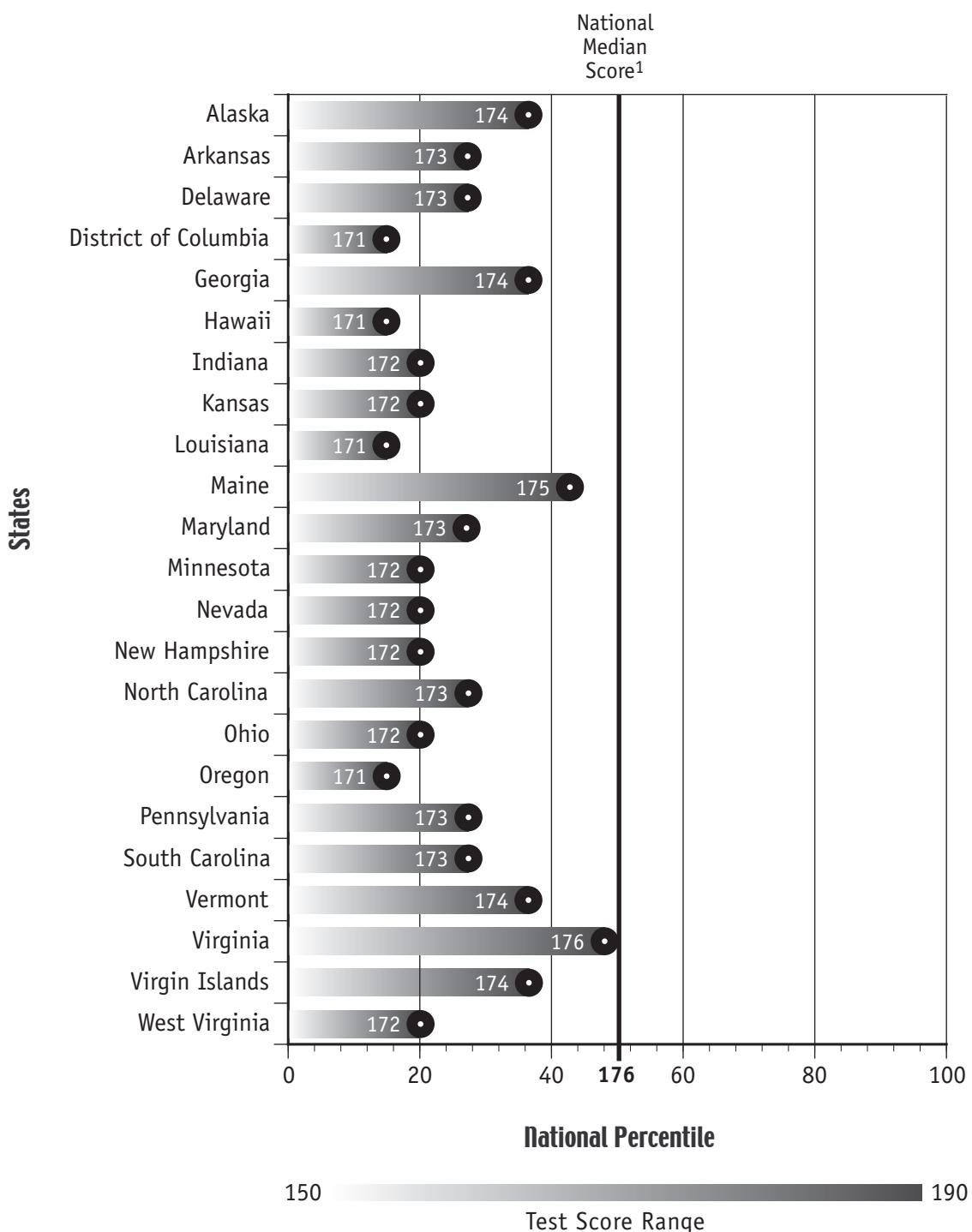


¹ National median score is defined by the score realized by the 50th percentile test taker.

Note: States not listed did not participate in Praxis Pre-Professional Skills Testing Program in 2000-2001.

Sources: Title II Data Collection—State Reports, 2002; Educational Testing Service.

FIGURE 7: STATE MINIMUM PASSING SCORES, PREPROFESSIONAL SKILLS TEST: WRITING, 2000-2001

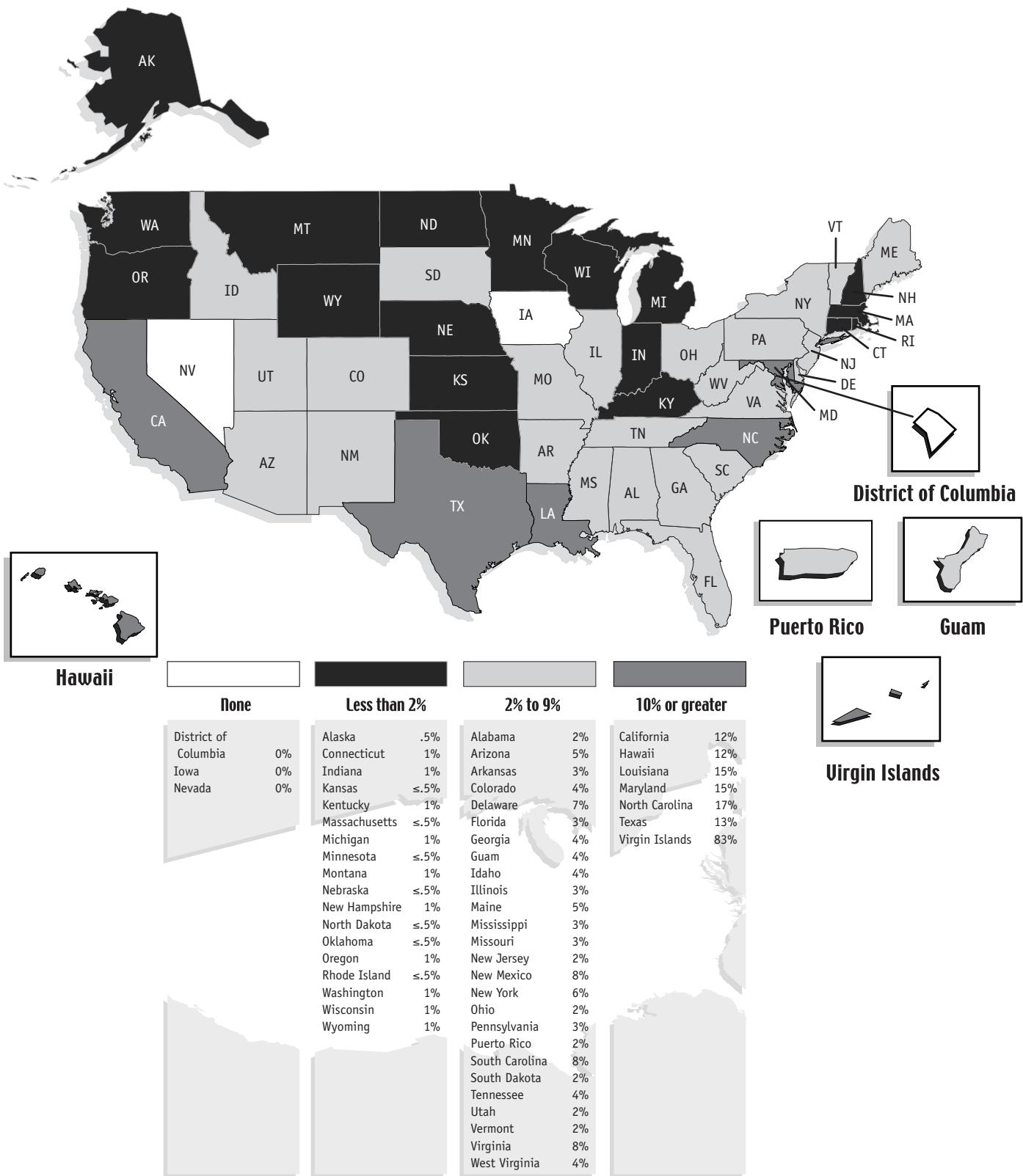


¹ National median score is defined by the score realized by the 50th percentile test taker.

Note: States not listed did not participate in Praxis Pre-Professional Skills Testing Program in 2000-2001.

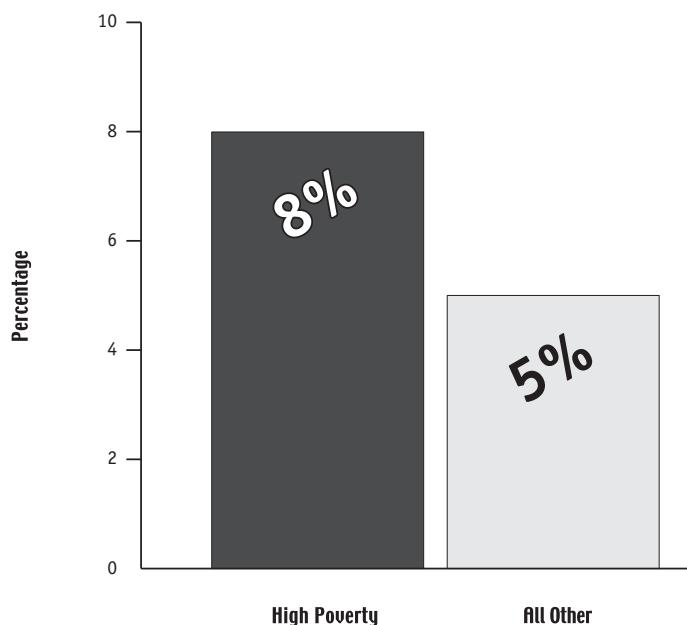
Sources: Title II Data Collection—State Reports, 2002; Educational Testing Service.

FIGURE 8: PERCENTAGE OF TEACHERS ON WAIVERS: 2001-2002



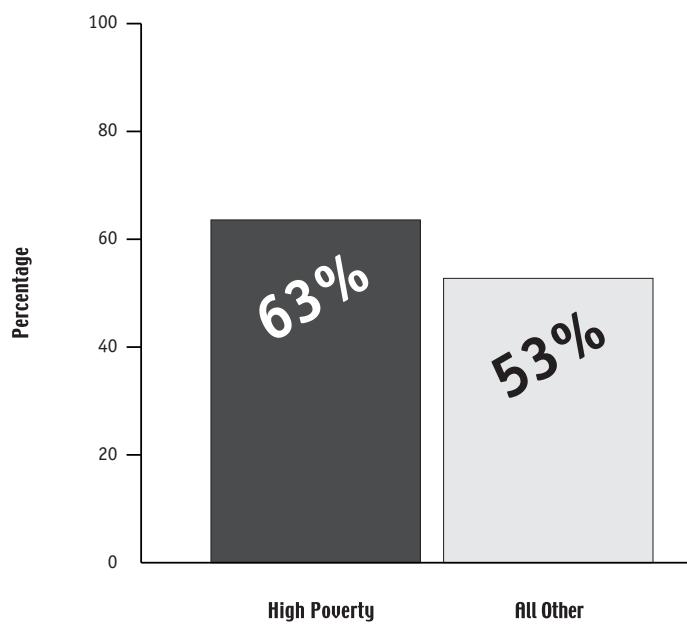
Source: Title II Data Collection—State Reports, 2002.

FIGURE 9: PERCENTAGE OF TEACHERS ON WAIVERS, BY POVERTY STATUS OF DISTRICT: 2001-2002



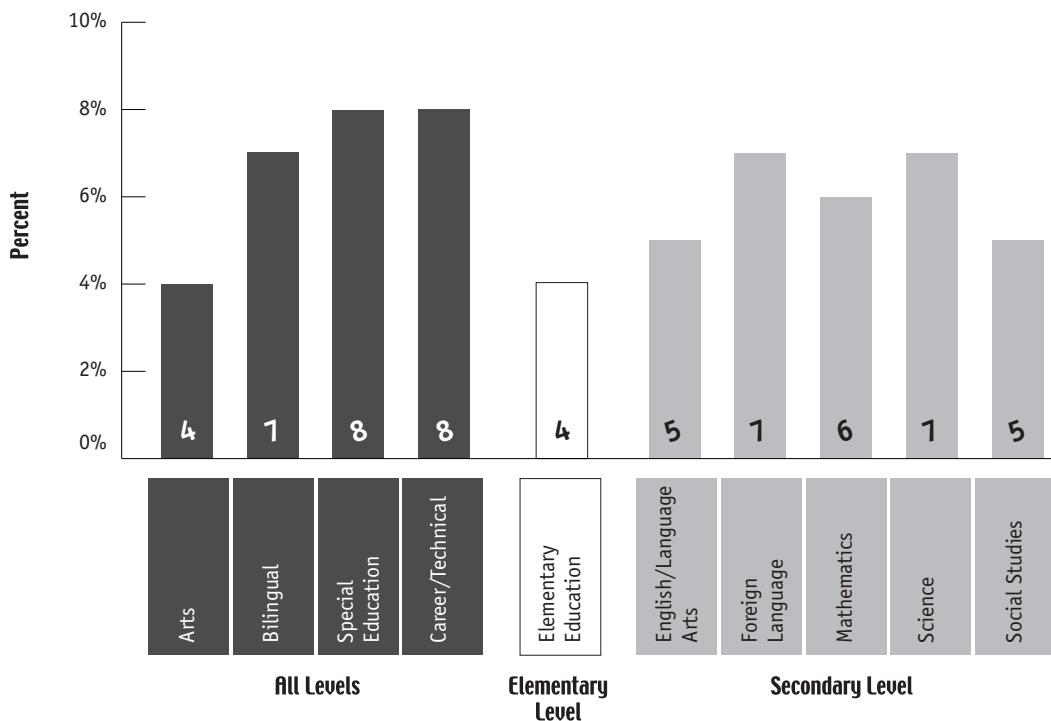
Source: Title II Data Collection—State Reports, 2002.

**FIGURE 10: PERCENTAGE OF TEACHERS ON WAIVERS WITH CONTENT EXPERTISE, BY POVERTY STATUS
OF DISTRICT: 2001-2002**



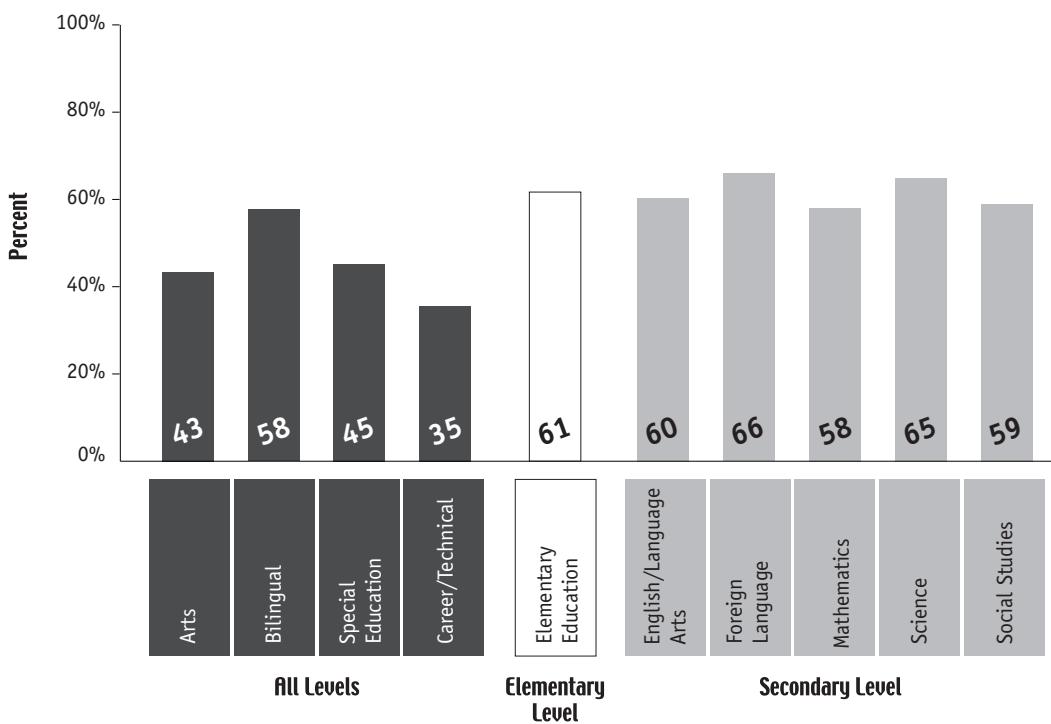
Source: Title II Data Collection—State Reports, 2002.

FIGURE 11: PERCENTAGE OF TEACHERS ON WAIVERS, BY SUBJECT: 2001-2002



Source: Title II Data Collection—State Reports, 2002.

FIGURE 12: PERCENTAGE OF TEACHERS ON WAIVERS WITH CONTENT EXPERTISE, BY SUBJECT: 2001-2002



Source: Title II Data Collection—State Reports, 2002.

SECTION TWO:

Promising Innovations to Meet the Highly Qualified Teachers Challenge



INTRODUCTION

After the publication of last year's report on teacher quality and throughout the process of implementing NCLB, states, school districts, institutions of higher education and others have sought input on how to meet the highly qualified teachers challenge. Section One of this publication focused primarily on policy changes that states should consider in order to meet these challenges and examined the progress states have made toward accomplishing the goals of having a highly qualified teacher in every classroom. In Section Two, this report attempts to go one step further by providing specific examples of promising reforms and initiatives that are designed to address the teacher quality challenge head-on.

The first cluster of innovations is focused on improving traditional teacher preparation programs. Several institutions and initiatives already appear to be succeeding on this score, and we tell their stories herein. The second cluster of initiatives is focused on alternatives to the traditional certification system. These innovations seek to raise academic standards and lower the barriers that keep many talented people out of the profession. These approaches show promise as essential parts of the solution to the teacher quality challenge, but further research is required to provide evidence of their effectiveness.¹

INNOVATIONS IN TRADITIONAL TEACHER PREPARATION

The following innovations seek to take the traditional model of schools of education and improve upon it. Each of these programs has developed its own way to compensate for the shortfalls that have historically prevented schools of education from achieving their full potential as sources of high-quality teachers.

¹ Selection of these examples is for illustrative purposes only and does not constitute an endorsement of any program by the U.S. Department of Education.

West Virginia University's Benedum Collaborative

With support from the Pittsburgh-based Claude Worthington Benedum Foundation, West Virginia University in 1989 established the Benedum Collaborative, a school-university partnership focused on teacher education and professional development. The core of the Collaborative's five-year program is a partnership with 29 local professional development schools. Students are admitted to the program after sophomore year, whereupon they immediately begin their clinical work in a local school. Over the next three years, they log 1,100 hours of clinical experience while taking courses that are closely linked to their clinical work. Upon graduation, students earn both a bachelor's degree in a content area and a master's in education with a recommendation for state certification.

Typically, teaching candidates in professional development schools are mainly supervised by university faculty. But the Benedum Collaborative changes that. Instead, K-12 teachers in the professional development schools are students' primary mentors and evaluators. "The Collaborative sees the K-12 teacher as one of the experts in terms of advising, mentoring and critiquing the students," says Van Dempsey, the Collaborative's director. "The relationship and input of the university faculty and K-12 teachers are collaborative and there is more of a balance between them. Together, they form a team to work with the students in the Collaborative."

The Collaborative also teaches candidates how to perform research and gather data to assess their own practice. During their final year, while in their student-teaching internship, candidates must complete an action research project that documents their performance as a teacher. This year, all 94 graduating students will present their research at an internal conference at the university and at their professional development schools.

Preliminary research on the Collaborative has shown promise for such a strategy. A study conducted by RAND Education, a nonprofit organization, found that participants in the Collaborative were better qualified than other students upon admission and were highly regarded by administrators in the professional development schools (Gill and Hove, 2000). Results from a limited review of student achievement data published in the same study revealed that students in professional development schools scored higher on standardized assessments than students in non-professional development schools. Researchers are intent on following up the achievement findings with additional program evaluation.

UTeach (Natural Sciences) at the University of Texas at Austin

UTeach began in the summer of 1997 when the College of Natural Sciences at the University of Texas at Austin decided to make a concerted effort to produce more secondary school teachers from among its math and science majors.² Dean Mary Ann Rankin assembled a group of award-winning secondary school teachers and tasked them with designing the best program they could. They soon developed a partnership with the College of Education, which set about redesigning the coursework leading to certification.

² For more information on the UTeach (Natural Sciences) program at the University of Texas, visit <http://www.uteach.utexas.edu>.

Before UTeach, there was almost “no flow of information between the colleges,” says Michael Marder, the program’s co-director and a professor of physics at the University of Texas. “Basically, students went to the College of Natural Sciences for their major and then went to the College of Education to take care of the teaching part.”

The College of Education eliminated generic education courses and designed a new set of courses. “The College of Education completely restructured their courses from scratch with the advent of UTeach,” says Marder. “All parties got together and were not satisfied with the courses as they existed. So the education faculty members re-did them. They are not generic education courses any more. Now they are all closely tied and linked to the courses in the College of Natural Sciences.” The sequence of courses now includes early experiences in the classroom, three methods courses, a course on scientific research, a course on the history and philosophy of mathematics and science and a semester of student teaching. Courses are focused heavily on the effective use of technology in math and science classrooms.

Candidates enjoy early and frequent experiences in the classroom under the guidance of a mentor teacher. As a recruiting tool, students are able to explore teaching through the initial Step 1 and Step 2 courses, classroom-based courses that involve preparing and teaching lessons to elementary and middle school students in local Austin schools. The program itself pays for these courses, enabling students to begin their teaching careers without incurring major expense. The education coursework is streamlined to allow students to graduate in four years with a bachelor’s degree from the College of Natural Sciences as well as certification to teach. UTeach is now the official program at the University of Texas for the certification of secondary science and mathematics teachers.

For those students who need to work to finance their education, UTeach has funded generous stipends for students to perform internships in one of over 30 local education-focused nonprofits. Students have created educational materials and worked with children at the Texas Memorial Museum, the Zilker Botanical Gardens, and many other nonprofit organizations.

Students in the College of Natural Sciences begin hearing about the program from the day they enter the college. Most students can enter the program at any point during their freshman, sophomore or junior years and still graduate within four years. The program attracts chemistry, biology, physics, geology, computer science and math majors (who make up half the program’s participants). There are currently 350 students in the program, which graduates about 50 students per year. The entering class grew 50 percent, from 60 to 90 students, in the last year, indicating a large increase in graduates in the coming years. The program expects to graduate 30 to 40 students a semester in the years ahead. “UTeach may be the largest program for secondary science and math teacher preparation at any major research university in our nation,” says Manuel Justiz (2002), Dean of the College of Education. “At The University of Texas, we believe that teacher preparation is a university-wide, shared responsibility—and that is what has made this program successful.”

Standards-based Teacher Education Project (STEP)

In 1996, work began on the Standards-based Teacher Education Project, a collaborative multi-state effort between the Council for Basic Education and the American Association of Colleges for Teacher Education. The idea was to work with colleges and universities to link teacher training to state academic standards. “In teacher education, universities weren’t aligning their programs for teachers with preparation in content knowledge so that teachers would be able to teach students to meet the standards,” says STEP vice president Diana Rigden. “That is the heart of STEP.”

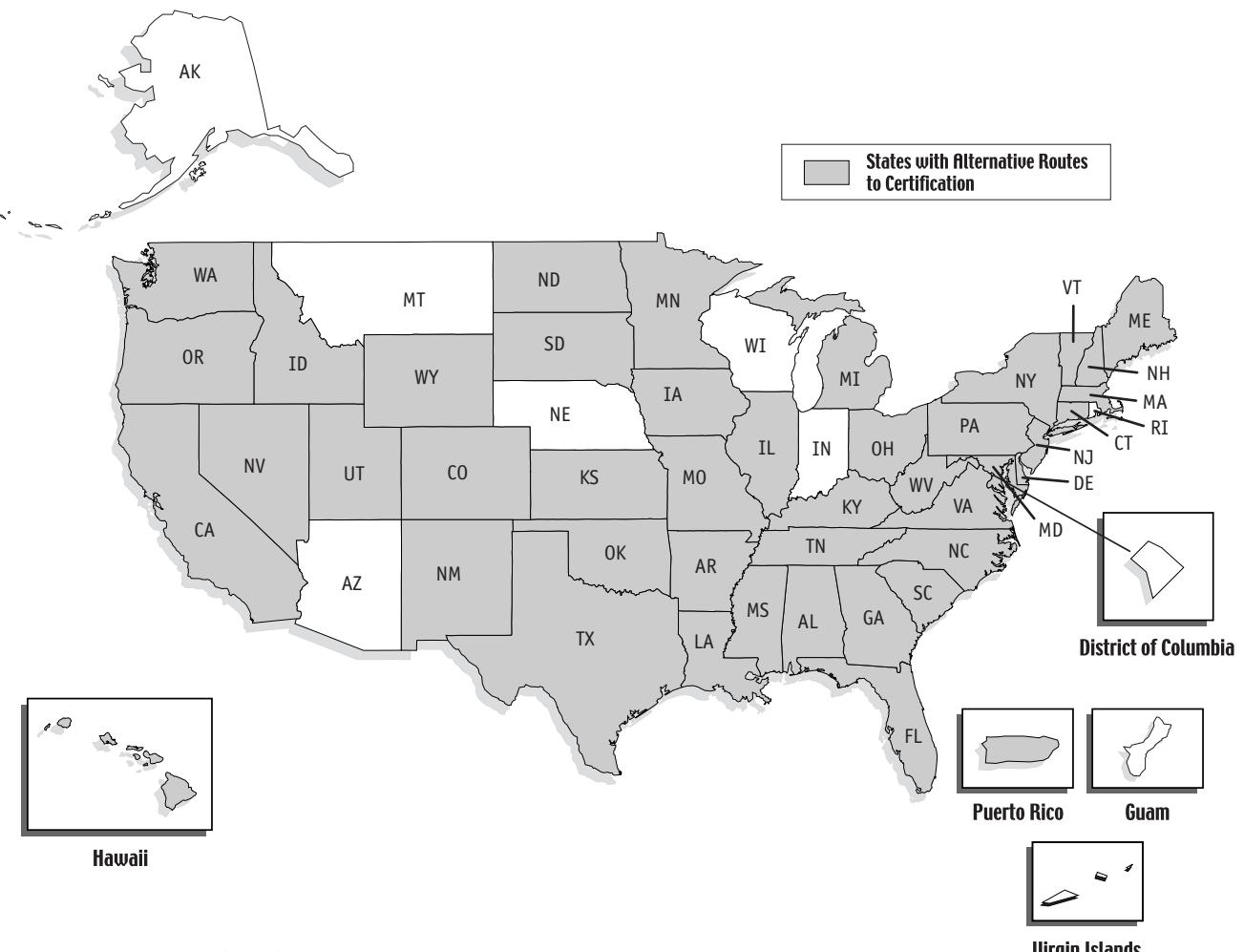
The program is built on three principles: 1) Teachers must know their subjects; 2) Teachers must know how to teach children to learn at high levels; and 3) Teachers must know how to assess student learning. STEP institutes task forces of faculty from schools of education, arts and sciences, K-12 schools and community colleges to review and rework an institution’s teacher-training program. The task forces, chaired by the deans of education and arts and sciences, study the existing teacher-training program in light of the state’s K-12 content standards for students. They then develop a plan to upgrade teacher training in line with the demands of standards-based reform programs. The focus is on aligning teachers’ knowledge of content with the expectations for students housed in a state’s academic standards. STEP participants are required to demonstrate that their entry, mid-program and exit assessments of teachers rigorously test whether candidates know their subjects. So far, 25 campuses in five states have completed the three-year STEP program, and 15 colleges and universities in Mississippi, Virginia and Indiana are currently working with STEP.

INNOVATIVE ALTERNATIVE ROUTES TO TEACHING

Shortages of highly qualified teachers are nothing new. In many cases, the traditional teacher training and state licensure system has been under-producing highly qualified teachers for so long that several states implemented alternative routes to teaching years ago. The best of these programs set high admissions standards, recruit people from all fields and provide rich school-based training that corresponds to state academic standards. What was once simply a way of dealing with shortages in key areas, however, has evolved into a new model for teacher preparation—not just as an alternative route, but as a significant contributor to the supply of teachers in several states.

As of October 2002, all but nine states (including the District of Columbia, Guam and the Virgin Islands) had approved an alternative route to certification (Figure 13). In New Jersey, more than one-fifth of new teaching hires come through alternative routes. Texas schools hire 16 percent of their new teachers each year through the state’s alternative routes; in California, the share is eight percent (Feistritzer, 2002). Alternative routes tend to attract experienced professionals as well as more minority and male candidates. While 91 percent of public school teachers in Texas are white, 41 percent of candidates in alternative certification programs are minorities. “Troops to Teachers,” a program that helps former members of the military transition into the teaching profession, attracts a cohort that is 29 percent minority and 90 percent male. Such teachers also tend to go into rural and

FIGURE 13: STATES WITH ALTERNATIVE ROUTES TO CERTIFICATION : 2002



Notes: Alternative routes are as defined by state. Visit www.title2.org for more information on state alternative routes.

Source: Title II Data Collection—State Reports, 2002.

urban schools at higher rates than traditionally certified teachers. Data from the first two cohorts of Troops to Teachers in 1994 and 1995 indicate that 70 percent have remained in teaching (Troops to Teachers, 2003).

Tomorrow's alternative routes must recruit high-caliber candidates into all fields and all schools; such routes must simply be one of many routes into the teaching profession. Below are routes that show promise for a new era of alternative pathways to teacher certification.

American Board for Certification of Teacher Excellence

Started in fall 2001 with a \$5 million grant from the U.S. Department of Education, the American Board for Certification of Teacher Excellence is a joint effort of the National Council on Teacher Quality and the Education Leaders Council.³ The American Board is developing a distinctive alternate certification to the teaching profession. It will offer initial "Passport Certification" to teaching candidates who hold a bachelor's degree, demonstrate mastery of their subject matter, pass a test of professional knowledge and complete a pre-service program of professional development.

The American Board's certification process promises an innovative way to meet the twin challenges of raising academic standards for teachers while lowering barriers to the profession. High academic standards are maintained through rigorous exams of candidates' knowledge of their subject matter and of best practices in education. The American Board lowers barriers and provides an alternative route to the profession that does not require would-be teachers to attend a school of education in order to apply for certification. This will enable thousands of talented college graduates and mid-career professionals to enter teaching without having to bear the burden and expense of post-graduate training. The American Board "bases its certification not on whether an applicant has come up through the traditional route, such as a college of education, but on whether that teacher knows his or her academic content and classroom management skills," says American Board president Kathleen Madigan (2003). "That's teacher excellence—and that's 'highly qualified.'"

Standards for the American Board's content and professional knowledge examinations were developed after a comprehensive review of state and national standards and certification requirements for K-12 education. American Board experts also closely examined states, including Virginia, Massachusetts and California, whose standards are widely considered to be among the finest in the nation. For the professional knowledge exam, American Board experts conducted a review of the research literature on effective teaching, including only those studies that met high standards for scientific rigor, and incorporated the findings into its standards and frameworks. The professional knowledge exam tests candidates on their knowledge of instructional design, delivery of instruction, classroom management and organization, student assessment, student diversity and parent communication.

³ For more information on the American Board for Certification of Teacher Excellence visit <http://www.abcte.org>.

So far, the American Board has created standards for content certification in elementary education (K-6), English (grades 6-12), and mathematics. The American Board professional knowledge and elementary education exams are scheduled to be available to candidates in the fall of 2003, while exams for English and math should be available the following winter. The exams will be computer-based and will use video and audio of classroom scenarios and student performance to assess a candidate's knowledge of best practices.

Pennsylvania was the first state to recognize the American Board's "Passport" certificate as valid preparation to teach in the state's public schools. Legislators in New Hampshire, Colorado, South Carolina, Florida, Utah, North Carolina, Arizona, Virginia and Alaska are also considering making the American Board another route to certification. The ultimate goal is to create a certificate that is recognized in all 50 states.

Each American Board candidate will be assigned an advisor to guide them through the certification process from exam preparation through completion, including the development of a pre-service program of professional development. A range of options will be available to meet the particular needs of each candidate. These options will include: on-line coursework; instructional experience in teaching; demonstrated competence through clinical experience in teaching; and credit for teaching experience in other fields such as military and corporate training. Such flexibility recognizes people's talents and experiences while maintaining a priority on high-quality instructional experience.

The American Board is also working to make teaching more attractive by offering an advanced "Master Teacher" credential to those who demonstrate outstanding proficiency in their subjects and, most importantly, to those who can document learning gains among their students. The Master Teacher certificate will be available beginning in 2004.

The American Board was recently recognized by Secretary Paige for its innovative approach. "It focuses on what teachers need to know and be able to do in order to be effective, instead of the number of credits or courses they've taken," he told those gathered at a National Press Club event. "It demands excellence rather than exercises in filling bureaucratic requirements" (Paige, 2003).

"Some people will argue that this change is too radical, that it's too risky, that we should maintain the status quo," Secretary Paige added. "Well, I agree that it's radical. It's radically better than the system we have now, a system that drives thousands of talented people away from our classrooms."

California's Technology to Teachers Program

Another innovative approach, similar to the Troops to Teachers model, is California's "Technology to Teachers" program. In 2001 the state awarded a two-year, \$1.6 million grant statewide to five different workforce investment boards to create a program offering laid-off technology workers the opportunity to enter the state's classrooms. Initially, more than 500 individuals interested in making the switch to teaching contacted the various

workforce investment boards to get more information. NOVA⁴ and the Silicon Valley Workforce Investment Network (SVWIN) run Technology to Teaching Programs in Santa Clara County.⁵ They work in conjunction with local universities, such as San Jose State University and Cal State Monterey Bay, along with the South Bay Teacher Recruitment Center. There are currently about 115 teaching candidates enrolled in these two programs; statewide, the goal is to attract up to 200 laid-off high-tech workers to the state's math and science classrooms. Candidates must hold a bachelor's degree, pass the CBEST (the state's basic-skills test for teachers) and demonstrate competency in the field in which they wish to teach.

In admitting candidates to the program, first preference is given to laid-off technology workers who possess at least a bachelor's degree in math or science, including computer science. Second preference is given to workers laid off from other industries who majored in these hard-to-staff subjects. Finally, laid-off technology workers with a bachelor's in any subject are considered.

Candidates can choose their own route to the classroom. They may spend a year as a full-time student taking the courses necessary for certification. Or they can enter the classroom right away as full-time, paid intern teachers while taking education courses toward their certification at night. Either way, the Technology to Teaching Program provides successful applicants with financial assistance to help pay for the coursework.

The NOVA program has attracted candidates like Anthony Silk, now a math teacher at Cupertino High in Silicon Valley. Silk was laid off from the high-tech firm where he worked after a career as a Navy lieutenant. With a master's degree in aeronautical and astronautical engineering and experience as an aircraft systems instructor and high-tech products manager, Silk brings a rich background in both theoretical and practical mathematics to the classroom. Reflecting on his new career as a teacher, he says, "This is so much more rewarding than high tech" (Borja, 2003).

New York City Teaching Fellows

New York City's response to a shortage of qualified teachers was to create its Teaching Fellows program in 2000.⁶ The program recruits candidates who hold at least a bachelor's degree. Candidates receive two months of pre-service training during the summer before they enter the classroom. The pre-service training includes coursework toward earning their master's in education; field-based work with experienced New York City teachers; and meetings with an advisor to learn teaching skills and classroom-management techniques. A non-taxable stipend of \$2,500 is provided to defray their living expenses during the summer.

⁴ For more information on the NOVA program visit http://www.novaworks.org/job_seekers/teacher_training.html.

⁵ For more information on the SVWIN Technology to Teachers program visit <http://www.tech2teacher.org>.

⁶ For more information on the New York Teaching Fellows program visit <http://www.nycteachingfellows.org>.

Upon completing their pre-service training, Teaching Fellows enter the classroom as full-time first-year teachers. They are required to have a bachelor's or master's degree in the subject they teach. Meanwhile, the city pays the bulk of the cost for Teaching Fellows to pursue their master's in education in the evenings and on weekends at one of 14 area colleges and universities with which the program has partnered. The coursework, including courses in the history of education, the methods and principles of teaching, the philosophical foundation of education, and classroom organization, typically takes about two years, whereupon Fellows are eligible for the state's initial certification. After three years of teaching, they can apply for the state's professional certification.

About 1,850 Fellows began teaching this year in high-need schools largely in the Bronx and in Brooklyn, representing about 25 percent of the city's new hires. They come from a diverse array of fields—the arts, the financial sector, consulting, accounting, engineering; stay-at-home parents, journalists, lawyers and doctors. The program received 15,000 applications for the 2002-03 school year, and 20,000 applications for next year.

Western Governors University

Another promising innovation is the development of online teacher-preparation programs that enable professionals to fit the courses they need for certification into their busy lives. In fall 2001, the U.S. Department of Education awarded a \$10 million, five-year Star Schools grant to Western Governors University (WGU), an online consortium of 19 Western states and 45 universities, to develop a competency-based distance learning program for teaching candidates.⁷ The WGU Teachers College now offers K-8 licensure programs as either a bachelor's degree, a postbaccalaureate certificate, or as part of a master's degree. The Teachers College also offers associate degrees for paraprofessionals, an endorsement in mathematics for teachers who are already certified and a master's degree in learning and technology. The program is designed for nontraditional candidates such as paraprofessionals, uncertified teachers and professionals who are changing careers, as well as current teachers who want to advance their education.

WGU's program is based on a candidate's competency rather than the number of hours spent in a classroom. Students take pre-assessments that measure their knowledge of the subject matter. Then they are assigned a faculty mentor who designs an individual program and judges when they are ready for the next assessment. The university does not develop its own courses; instead, it collaborates with colleges, universities, corporations and training organizations to make online distance-learning materials available to its students. Candidates seeking initial certification must also spend up to six months of supervised training in a K-12 school.

The WGU Teachers College offers more opportunities not only to nontraditional candidates but also to those in rural and remote areas who might not have access to traditional on-campus learning. For instance, remote villages in Alaska have paraprofessionals who

⁷ For more information on Western Governors University visit <http://www.wgu.edu/wgu/index.html>.

need additional education in order to comply with NCLB but have no access to local universities. Soldiers stationed in a foreign country but nearing retirement can log on to WGU and take the courses necessary to become a teacher. Once back in the United States, they can coordinate with the Troops to Teachers program and find a high-need school in which to serve.

Starting in fall 2003, the WGU Teachers College will offer an online bachelor's degree with licensure in secondary-school mathematics or science; a postbaccalaureate licensing program in math and science for uncertified teachers and mid-career professionals; and master's degrees in teaching math or science. Thus far, Arizona, Nevada and Texas have officially accepted WGU programs for licensure; through reciprocity agreements with these states, the WGU degree is recognized by 43 other states as well. WGU recently was accredited by four regional commissions including the Northwest Association of Schools and of Colleges and Universities, the North Central Association of Colleges and Schools, the Western Association of Senior Colleges and Universities, and the Western Association of Community and Junior Colleges.

States are also exploring the online model for teacher training. For example, the University of Maryland has been awarded a \$2 million Department of Education grant to develop its own online teacher certification program. The goal is to produce 300 new teachers for a high-need school district over the next five years.

Teach For America Program

One well-known alternative way into teaching is Teach For America, a New York City-based nonprofit that recruits high-achieving college graduates to spend at least two years teaching in a disadvantaged urban or rural school. Since 1990, Teach For America has placed more than 9,000 college students in schools from the Mississippi Delta to Los Angeles. In that time, it has become one of the nation's largest suppliers of teachers; according to the American Association of Colleges for Teacher Education, only 10 percent of institutions produce more new teachers each year. Teach For America's recruits are precisely the type of candidates the nation needs to attract to teaching: the typical member has a 3.5 GPA and 89 percent have leadership experience. These teachers receive five weeks of training during the summer and take courses toward certification during the year while they teach full time. The Houston school district, the subject of the only major study of Teach For America, found 8 percent of its new teachers in the 2001-02 school year through the program.

The research on Teach For America is encouraging. Analysts at the Hoover Institution compared the performance of Teach For America recruits with that of both new teachers in the Houston schools as well as all the teachers in the district. In grades three through five, they found that Teach For America members elicited greater achievement gains

among their students.⁸ In mathematics, students of new Teach For America recruits finished 12 percent of a standard deviation higher than students of other new teachers. Teach For America recruits were also much more consistent than other teachers; for instance, more than 60 percent of Teach For America teachers performed better than the median non-TFA teacher in reading. The study's authors concluded, "If you were choosing between two math teachers, and the only thing you knew about them was that one was a TFA member and one was not, you would choose the TFA member. This would give you the best chance of selecting a good teacher" (Raymond and Fletcher, 2002).

Transition to Teaching Partnership

For the past 16 years, the Fairfax County school district in Fairfax, Virginia, has partnered with The George Washington University in Washington, DC, to operate the Transition to Teaching program.⁹ The program's goal is to attract high-performing liberal arts and science graduates to teaching. It requires a one-year commitment, during which teaching interns serve as permanent substitute teachers in Fairfax County high schools while taking the coursework necessary for licensure through George Washington University. Each intern is assigned to one high school and within that school, to the academic department in which he/she is seeking licensure. Interns also observe and assist in other classrooms, team teach and fulfill their student teaching requirement in the spring. They are observed and supervised by members of the George Washington University faculty.

Another advantage of the program is that it pays for 18 of the 24 required education credits and pays teaching candidates a \$500 monthly stipend during the 10 months of the school year. At the end of the year-long internship and coursework, candidates are certified to teach at the secondary level in Virginia and the District of Columbia. The relatively short time frame and the financial support make it much easier for talented college graduates and mid-career professionals to enter teaching.

⁸ In reading, there were fewer extremely low- and high-performing teachers among the Teach For America recruits. The difference between the two distributions was found to be statistically significant in both cases. In mathematics, elementary achievement gains of students with new TFA teachers were 12 percent of a standard deviation higher than those with other new teachers, a result that was statistically significant. Students of all TFA teachers gained 2.9 percent of a standard deviation more in math than did students of all teachers in the Houston district, a difference that was not statistically significant.

⁹ For more information on the Transition to Teaching program visit <http://www.gwu.edu/~seced/fairfax.htm> or <http://www.fcps.edu/DHR/recruitment/gwu.htm>.

SECTION THREE:

Continuing the Critical Work of Teacher Quality Reform



As discussed in the first section, one of the most crucial factors in a student's academic success is a highly qualified teacher. However, the need for highly qualified teachers in today's classrooms is acute. Improving the quality of teachers is an essential link in the chain of most reforms designed to help America's children achieve educational excellence. This is the reason teacher quality was a focus of the No Child Left Behind Act and is also the reason for this report. Moving every child forward will be impossible without a highly qualified teacher showing children the way. With so much in the balance, maintaining the status quo is simply not an option.

Although the problem is serious, promising solutions are close at hand. As demonstrated throughout this report, several state departments of education, private groups and universities have implemented bold reforms with encouraging results. Even though such reforms are not yet widespread, these examples prove that significant gains in teacher quality are indeed possible.

While no single proposal will work for every situation, the promising innovations profiled in this report can serve as tools in the crafting of customized programs to meet the challenge of producing highly qualified teachers. These real-life examples offer a variety of models for improving teacher quality. Reform-minded educators, legislators and citizens can use these examples to spark discussion, debate and reform at the state and local levels.

While state and local leaders will continue to play the lead role in improving teacher quality, there is an important federal role. That is the reason NCLB calls for all teachers in core academic subjects to be highly qualified by the end of the 2005-2006 school year and defines "highly qualified teachers" as those who not only possess full state certification, but also who have solid content knowledge of the subjects they teach.

If NCLB sets the schedule and the destination of teacher quality reform, then a reauthorized Higher Education Act (HEA) is one important way to get there. A central theme for the upcoming HEA reauthorization will be the improvement of teacher preparation, especially preparation in academic content, and the expansion of opportunities for talented individuals to enter teaching.

Although the Department does not yet have a detailed, final proposal for the HEA reauthorization, important concepts that are being explored include:

Support for the reform of teacher education – States and postsecondary institutions play a critical role in the recruitment, preparation, and retention of high-quality teachers through their teacher education programs (both pre-service and in-service) and certification systems. However, there is also a need for broad-based partnerships to redesign teacher preparation programs for improved teacher quality and student performance.

Continue to promote innovative teaching models – Innovations are needed in development of content expertise, identification and replication of best practices for teacher preparation and training, standards-based curriculum alignment and assessment and the development of research-based practices.

Removal of barriers and support for inventive approaches to certification – This will provide support for a variety of avenues to the teaching profession.

Increase in incentives for teacher recruitment – Enlarge the pool of teachers where they are needed by expanding programs such as teacher loan forgiveness.

CONCLUSION

Meeting the highly qualified teachers challenge is too big a project for any one program, school or state—or even for the U.S. Department of Education—to tackle alone. Only a partnership will prevail. This report demonstrates that by exchanging new ideas, by disseminating enlightening research and by spreading news of bold reforms we can both learn from and help one another as we all work toward the same goal. For its part, the Department will continue to team with those who seek to produce high-quality teachers by raising standards and lowering barriers. Through implementation of NCLB, reauthorization of the HEA and issuing reports like this one, the Department shows its commitment to working together toward teacher quality reform. Such a collective effort has the best chance of delivering the collective benefits that come from giving all our students the highly qualified teachers they deserve.

REFERENCES

- Borja, R.R. (January 22, 2003). Reversal of fortune. *Education Week*.
- Chaney, B. (1995). Student outcomes and the professional preparation of 8th-grade teachers in science and mathematics. Unpublished manuscript. Prepared for NSF Grant RED-9255255. Rockville, MD: Westat.
- Ehrenberg, R. and Brewer, D. (1994). Do school and teacher characteristics matter? Evidence From High School and Beyond. *Economics of Education Review*, 14, 1-23.
- Farkas, S., Johnson, J., & Foleno, A. (2000). *A sense of calling: Who teaches and why*. New York: Public Agenda.
- Feistritzer, C.E. (2002). *Alternative teacher certification: A state-by-state analysis*, 2002. Washington, DC: National Center for Education Information.
- Ferguson, R. and Ladd, H. (1996). How and why money matters: An analysis of Alabama schools. In H. Ladd (ed). *Holding Schools Accountable*. Washington, DC: Brookings Institution, 265-298.
- Gill, B. and Hove, A. (2000). *The Benedum Collaborative Model of Teacher Education: A Preliminary Evaluation*. Pasadena, CA: RAND Education
- Goldhaber, D.D. and Brewer, D.J. (Summer 2002). Does teacher certification matter? High school teacher certification status and student achievement. *Education Evaluation and Policy Analysis*, 22 (2), 129-145.
- Goldhaber, D.D. and Brewer, D.J. (1996). Evaluating the effect of teacher degree level on Educational Performance. In W. Fowler (Ed.), *Developments in School Finance (NCES 97-535)*, 197-210. U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Goldhaber, D.D. and Brewer, D.J. (1998). Why should we reward degrees for teachers. *Phi Delta Kappan*, October, 134-138.
- Greenwald, R., Hedges, L., & Laine, R. (1996). The effect of school resources on student Achievement. *Review of Educational Research*, 66, 361-396.
- Henke, R.R., et. al. (1996). *Out of the Lecture Hall and into the Classroom: 1992-93 College Graduates and Elementary/Secondary School Teaching*. Washington, DC: U.S. Department of Education.
- Hess, F.M. (2001). *Tear down this wall: The case for a radical overhaul of teacher certification*. Washington, DC: Progressive Policy Institute.

- Justiz, M. (2002). Speech delivered at the White House Conference on Preparing Tomorrow's Teachers, available at
<http://www.ed.gov/initis/preparingteachersconference/justiz.html>
- Kain, J. and Singleton, K. (1996) Equality of education revisited. *New England Economic Review*, May-June, 87-111.
- Madigan, K. (2003). Testimony before the New Hampshire House Education Committee, February 12, 2003.
- Miller, J., McKenna, M., & McKenna, B. (1998) A comparison of alternatively and traditionally prepared teachers. *Journal of Teacher Education*, 49, 165-176.
- Monk, D.H. (1994). Subject area preparation of secondary mathematics and science teachers and student achievement. *Economics of Education Review*, 13, 125-145 .
- Monk, D. and King, J. (1994). Multilevel teacher resource effects on pupil performance in secondary Mathematics and science. In Ronald G. Ehrenberg (ed.), *Choices and Consequence*. Ithaca, NY: ILR Press.
- Murnane, R.J. et al. (1991). *Who Will Teach? Policies that Matter*. Cambridge, MA: Harvard University Press.
- Paige, R. (2003). Speech at National Press Club, March 18, 2003. Available from
<http://www.ed.gov/Speeches/03-2003/03182003.html>
- Podgursky, M. and Ballou, D. (1999). Teacher Training and Licensure: A Layman's Guide, *Better Teachers, Better Schools*. Washington, D.C.: Thomas B. Fordham Foundation.
- Policy and Program Study Service. (2003). National Center for Education Statistics's Schools and Staffing Survey, 1999-2000. U.S. Department of Education. Unpublished tabulations.
- Raymond, M. and Fletcher, S. (2002). The Teach For America Evaluation. *Education Next*, Spring, 62-68.
- Rowan B. (2002). *What Large-Scale, Survey Research Tells Us About Teacher Effects on Student Achievement: Insights From the Prospects Study of Elementary Schools*. Ann Arbor: University of Michigan (unpublished).
- Rowan, B., Chiang, F.S., & Miller, R. J. (1997). Using research on employee's performance to study the effects of teacher on students' achievement. *Sociology of Education*, 70, 256-284.

Sanders, W. and Rivers, J.C. (1996). Cumulative and residual effects of teachers on future student academic achievement. *Research Progress Report*. Knoxville, TN: University of Tennessee Value-Added Research and Assessment Center.

Sanders, W.L. and Horn, S.P. (1998). Research findings from the Tennessee value-added assessment system (TVAAS) database: Implications for educational evaluation and research. *Journal of Personnel Evaluation in Education*, 12, 247-256.

Sanders, W.L., Saxton, A.M., & Horn, S.P. (1997). The Tennessee value-added assessment system: A quantitative, outcomes-based approach to educational assessment, in *Grading Teachers, Grading Schools*, edited by J. Millman, Thousand Oaks, CA: Corwin Press, Inc.

Sanders, W.L. and Topping, K.J. (1999). Teacher effectiveness and computer assessment of reading: relating value added and learning information system data. Tennessee Value Added Assessment System.

Sanders, W.L. and Horn, S.P. (1995). Educational assessment Reassessed: The usefulness of standardized and alternative measures of student achievement as indicators for the assessment of educational outcomes. *Educational Policy Analysis Archives*, 3 (6).

Scheerens, J. and Bosker, R. (1997). *The Foundations of Educational Effectiveness*. New York: Pergamon.

Troops to Teachers Program Office. (2003). Unpublished retention data. U.S. Department of Defense.

U.S. Department of Education. (November 2002). Title II data collection system: State reports, 2002. Available at <http://www.title2.org>

U.S. Department of Education. (December 2, 2002). Title I—Improving the Academic Achievement of the Disadvantaged; Final Rule, Available at <http://www.ed.gov/legislation/FedRegister/firrule/2002-4/120202a.pdf>

U.S. Department of Education. (December 19, 2002). Improving Teacher Quality Grants: Title II, Part A, Non-Regulatory Guidance. Available at <http://www.ed.gov>

Whitehurst, G.J. (2002). Remarks delivered at the White House Conference on Preparing Tomorrow's Teachers, March 2002. Available at <http://www.ed.gov>

Wright, S.P., Horn, S.P., & Sanders, W.L. (1997). Teachers and classroom context effects on student achievement: Implications for teacher evaluation. *Journal of Personnel Evaluation in Education*, 11 (1), 57-67.

APPENDIX A:

Scientifically Based Research on Teacher Quality: Research on Teacher Preparation and Professional Development

Grover J. Whitehurst, Ph.D.

White House Conference on Preparing Tomorrow's Teachers

March 5, 2002

My assignment for this conference was to examine and report on research related to the preparation and professional development of teachers. That is a big topic and there are many ways to organize the scholarship and frame the discussion. I decided to focus on research most relevant to policy. I'm using the word policy to mean a governmental plan stipulating goals and acceptable procedures for pursuing those goals.

The most recent and impactful statement of government policy on the preparation and professional development of teachers is the reauthorization of the Elementary and Secondary Education Act (ESEA), signed into law by the President on January 8th of this year.

Title I of ESEA addresses the goal of enhancing academic achievement for disadvantaged children. With respect to teachers, it requires that states, beginning this coming school year, must prepare and widely disseminate a report that includes information on the quality of teachers and the percentage of classes being taught by highly qualified teachers in each public school in the state. The framers of this bill defined a "highly qualified teacher" as someone with a bachelor's degree who is licensed to teach on the basis of full state certification or passing the state licensure exam. The bar is raised beyond simple licensure or certification for new teachers: At the elementary school level, a highly qualified new teacher must have passed a test of subject knowledge and teaching skills in reading, writing, mathematics. At the middle and secondary school level, a highly qualified new teacher must have passed a rigorous exam or have the equivalent of an undergraduate major in each of the subjects he or she teaches. A goal of the bill is for disadvantaged students to have equal access to high quality teachers.

While Title I of ESEA approaches the goal of placing highly qualified teachers in the classroom by mandating pre-service credentials, Title II addresses the same goal by funding in-service professional development for teachers. Many forms and functions of professional development are allowed under Title II. One focus is on increasing teachers' knowledge of the academic subjects they teach through intensive, classroom-focused training. Another focus is on obtaining alignment between professional development activities and student academic achievement standards, state assessments, and state and local curricula.

What do these requirements within ESEA suggest with regard to the framers' assumptions about teacher preparation and professional development, and to what degree are those assumptions supported by research?

These are assumptions I've extracted from the ESEA provisions:

1. Teachers matter (otherwise why focus on teachers at all)
2. Teachers vary in their quality (otherwise why distinguish highly qualified teachers from others)
3. Quality is affected by:
 - a. General knowledge and ability (otherwise why require a bachelor's degree)
 - b. Certification and licensure (otherwise why make that a defining feature of being highly qualified)
 - c. Experience (otherwise why distinguish beginning from experienced teachers)
 - d. Subject matter knowledge (otherwise why require that beginning teachers have demonstrated through their college major or an examination that they have knowledge of the subject matter they teach)
 - e. Intensive and focused in-service training (otherwise why provide funds to support such activities)
 - f. Alignment between teacher training and standards-based reforms (otherwise why require evidence of such alignment in state applications for funding)

Before I describe what research tells us about these assumptions, we need to take a brief side trip into the world of methodology. It is typical in science that a given problem is addressed with multiple methods. The individual methods often ask and answer slightly different questions. In the early stages of research on a topic, the inconsistencies and ambiguities that result from different methods can be frustrating. Witness, for example, the recent flurry of conflicting studies and conclusions on the value of mammography in the prevention of breast cancer. However, conflicting studies and interpretations often spur the next round of investigations, and over time the evidence converges and generates consensus.

Research on teacher preparation and professional development is a long way from the stage of converging evidence and professional consensus. Several approaches to studying the topic are used, and like the proverbial blind men examining different parts of an elephant, each generates a different perspective. I will provide some background knowledge on the different methodological tools as I address the principal policy issues.

Do teachers matter?

The answer may seem so obvious that the question isn't worth asking. One reason is that all of us can generate anecdotes about teachers who have made a difference in our lives. I remember my 11th grade English teacher whose interest in my writing and the books I was reading inspired me to think about careers involving words. But however powerful such personal narratives may seem, we need to remember that in science the plural of anecdote is not evidence. Most undergraduates believe in extrasensory perception and will tell stories about experiencing it. That doesn't mean that extrasensory perception is a fact.

The Coleman study

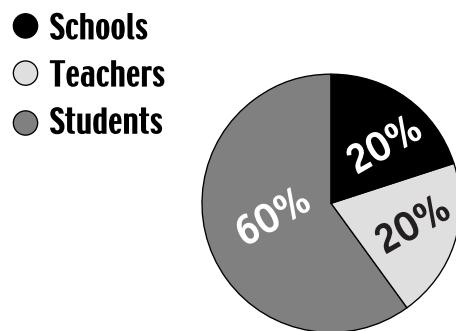
Contrary to our intuitions and anecdotes about the importance of teachers, the landmark 1966 study, Equality of Educational Opportunity, by sociologist James Coleman, suggested that differences in teachers did not matter much. This was a huge study employing 60,000 teachers in grade 6 and beyond in over 3,000 schools. The principal finding was that nearly all of the variability in how students achieved was attributable to their socioeconomic background rather than to the schools they attended. On the subject of teacher attributes, Coleman wrote, "A list of variables concerning such matters as teachers' scores on a vocabulary test, their own level of education, their years of experience, showed little relation to achievement of white students, but some for Negroes.... Even so, none of these effects was large."

Coleman's methodology is now understood to have been seriously flawed. All of his analyses were conducted on data that had been aggregated to the school level. For example, the average vocabulary score for all teachers in a school was related to the average test score for all children in a school. Researchers now understand that aggregating data in this way can distort findings. I am reminded of the man who had his head in the oven and his feet in the freezer but whose temperature, on average, was just right. If you average together the effective teachers with the ineffective teachers, and the high performing students with the low performing students, you don't get to see the cold and hot spots where teacher characteristics might make a difference.

Recent multi-level studies

More recent studies in the tradition of Coleman's work have analyzed multilevel data that goes down to individual classrooms and students. Statistical techniques are used to apportion differences in children's academic achievement among the different environments that are assumed to affect their learning and development. Such studies typically parse out the influence of the individual abilities and knowledge the child brings to the classroom, the classroom itself, and the characteristics of the school in which that classroom is housed. With enough children and teachers and schools, and with some fancy statistics, it is possible to estimate the relative contribution of each of these factors to the differences that are observed among children in academic achievement. These studies generate much higher estimates of the relative influence of teachers and schooling on academic achievement than reported by Coleman.

The pie chart that follows reflects findings from a recent scholarly review of this literature (Scheerens & Bosker, 1997). Roughly 20% of the differences in student achievement is associated with the schools children attend, another 20% is associated with individual classrooms and teachers, and the remaining 60% is associated with differences among the children in each classroom, including the effects of their prior achievement and their socioeconomic background.

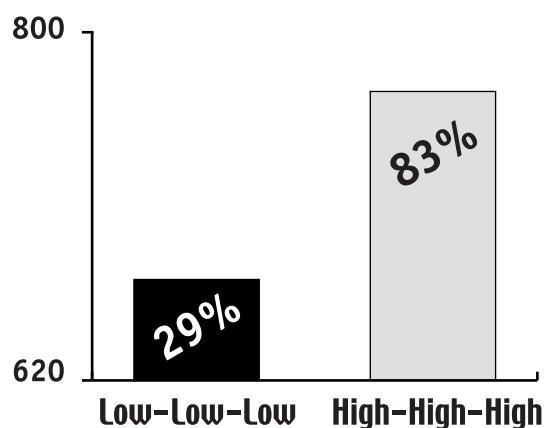


Note two things about these multilevel studies. First, they only are able to indicate the relative contribution of teachers to academic achievement, not the mechanisms by which teachers affect student learning. Thus, we find that teachers are important, but not why. Second, because the data are collected at a single point in time, the influence of teachers may be substantially underestimated. This is because the 60% effect attributable to students in the pie chart includes the effects of instruction in previous grades. Some children in a given class will have had an effective teacher the previous year and some will have had an ineffective teacher. But we can't see these influences if the children are measured only at one point in time. These unmeasured effects of previous teachers get folded into the unexplained differences among children in the same classroom. This increases the estimated influence of children compared to teachers and schools.

Value-added studies

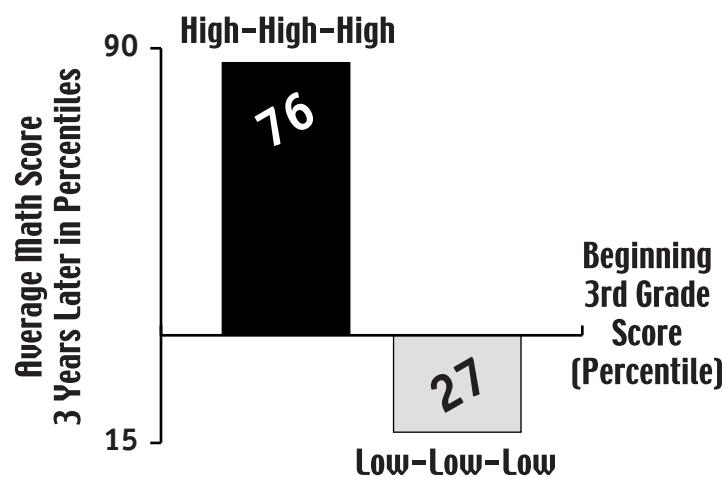
Value-added methods are a new and more powerful way of addressing the question of whether teachers matter. Value-added methods examine students' gains from year to year rather than their scores at a single point in time. Teachers who are adding value to student achievement will be those whose students gain most over the school year. Thus if a math teacher has children who start the year at the 95th percentile and end the year at the 90th percentile, she would not be considered an exemplary teacher even if the performance of her students was the highest in the district. In contrast, a teacher who raised her students' performance from the 45th to the 60th percentile over the course of a year would be deemed very effective even if her children performed below the average in the district. Value-added methods require that children be followed longitudinally, i.e., the same children must be tested each year and identified uniquely in the resulting database.

Sanders and Rivers (1996) used value-added methods to examine the cumulative effects of teacher quality on academic achievement. The effectiveness of all math teachers in grades 3, 4, & 5 in two large metropolitan school districts in Tennessee was estimated by determining the average amount of annual growth of the students in their classrooms. These data were used to identify the most effective (top 20%) and the least effective (bottom 20%) teachers. The progress of children assigned to these low and high performing teachers was tracked over a three-year period. The next figure illustrates the results.



Children assigned to three effective teachers in a row scored at the 83rd percentile in math at the end of 5th grade, while children assigned to three ineffective teachers in a row scored at the 29th percentile.

The next figure illustrates results from an equivalent study on math performance in Dallas (Jordan, Mendro, & Weerasasinghe, 1997). The results are very similar.



Understand that these studies overestimate the actual effect of teachers on academic achievement because the assignment of students to teachers from year to year is essentially random, at least in elementary school (Rowan, 2002). The typical child is not lucky enough to get 3 highly effective teachers or unlucky enough to get 3 highly ineffective teachers in a row. However, these studies demonstrate persuasively that the potential effect of teacher quality on academic achievement is quite high.

In summary, we now know that Coleman was wrong: Teachers do matter, as our anecdotal experiences suggest and as Congress assumed when it reauthorized ESEA and authorized \$3 billion annually for teacher training and professional development. Whew!

Characteristics of effective teachers

Given that teachers are important, the important research task is to identify the characteristics that distinguish quality teachers and to determine how those characteristics can be enhanced. Let's go through the characteristics assumed to be important in ESEA and take a look at the related research.

Certification and licensure

The issue of certification has generated more heat than light. You would think it would be simple to compare student achievement for certified versus uncertified teachers, but it is not. One reason is that states typically require some form of certification or licensure for a teacher in the public schools within some period of time after the teacher begins employment. Thus teachers without certification are typically inexperienced beginners. That means that simple comparisons of certified versus uncertified teachers are biased by differences in experience and age. Second, the issue of certification is often confused with the issue of alternative certification, which is a route to a teaching license that bypasses some of the undergraduate coursework requirements in education. Sometimes arguments for or against alternative certification are made on the basis of comparisons of teachers with certificates, including alternative certificates, with teachers working with provisional or temporary licenses. Third, the issue of certification is often confused with the issue of out-of-field teaching. Generally, out-of-field teachers, e.g., someone with a degree in English who is teaching math, are certified. Arguments for or against certification based on comparing out-of-field and in-field teaching are thus inappropriate. Fourth, the definitions and requirements for licensure and certification differ substantially from state to state, and sometimes within jurisdictions within the same state. These differences make it difficult to know exactly what is being compared when data are aggregated across states and jurisdictions.

With those caveats in mind, my reading of the research is that the evidence for the value of certification in general is equivocal at best. For example, Goldhaber and Brewer (1998) analyzed data from over 18,000 10th graders who participated in the National Education Longitudinal Study of 1988. After adjusting for students' achievement scores in 8th grade, teacher certification in 10th grade was not significantly related to test scores in 10th grade.

In another study, notable because it uses experimental logic rather than the correlational approaches that dominate study of this topic, Miller, McKenna, and McKenna (1998) matched 41 alternatively trained teachers with 41 traditionally trained teachers in the same school. There were no significant differences in student achievement across the classrooms of the two groups of teachers.

A study by Darling-Hammond (1999) stands in contrast to the many studies that find no effects or very small effects for teacher certification. She related scores on the National Assessment of Educational Progress at the state level to the percentage of well-qualified teachers in each state. "Well qualified" was defined as a teacher who was fully certified and held the equivalent of a major in the field being taught. For generalist elementary teachers, the major had to be in elementary education; for elementary specialists, the major had to be in content areas such as reading, mathematics, or special education. Darling-Hammond reported that teacher qualifications accounted for approximately 40 to 60 percent of the variance across states in average student achievement levels on the NAEP 4th and 8th grade reading and mathematics assessment, after taking into account student poverty and language background.

Although this study is frequently cited, the approach of aggregating data at the level of the state is seriously problematic. It goes backwards in terms of aggregation from the work of Coleman whose findings are considered suspect because the analyses were of data at the school level. Students do not experience a teacher with the average level of certification in a state; they experience a teacher who is or is not certified. The aggregation bias may account for Darling-Hammond's estimates of the effects of certification being light years out of the range of effects that have been reported by all other studies of this topic.

Subject matter knowledge

The effects of teacher training on academic achievement become clearer when the focus becomes subject matter knowledge as opposed to certification per se. The research is generally consistent in indicating that high school math and science teachers with a major in their field of instruction have higher achieving students than teachers who are teaching out-of-field (e.g., Brewer & Goldhaber, 2000; Monk, 1994; Monk & King, 1994; Rowan, Chiang, & Miller, 1997). These effects become stronger in advanced math and science courses in which the teacher's content knowledge is presumably more critical (Monk, 1994; Chiang, 1996).

The best studies, including the ones cited here, control for students' prior achievement and socio-economic status. Studies that simply report the association between teachers' undergraduate majors and student achievement are difficult to interpret. For instance the year 2000 National Assessment of Educational Progress in math reports that eighth-graders whose teachers majored in mathematics or mathematics education scored higher, on average, than 8th graders whose teachers did not major in these fields. However, there are many interpretations of this simple association, including a well-documented rich-get-richer process in which students with higher math abilities are assigned to classes taught by better-trained teachers.

Interestingly, the 2000 NAEP finds no relationship between math scores at 4th grade and teachers' major. Likewise, Rowan (2002) using a different dataset found no relationship in elementary school between certification in math and student achievement in math, and no relationship between having a degree in English and student achievement in reading. These findings suggest that subject matter knowledge in these areas as currently transmitted to teachers-in-training by colleges of education is not useful in the elementary school classroom.

General knowledge and ability

The most robust finding in the research literature is the effect of teacher verbal and cognitive ability on student achievement. Every study that has included a valid measure of teacher verbal or cognitive ability has found that it accounts for more variance in student achievement than any other measured characteristic of teachers (e.g., Greenwald, Hedges, & Lane, 1996; Ferguson & Ladd, 1996; Kain & Singleton, 1996; Ehrenberg & Brewer, 1994).

This is troubling when joined with the finding that college students majoring in education have lower SAT and ACT scores than students majoring in the arts and sciences. For example, among college graduates who majored in education, 14% had SAT or ACT scores in the top quartile, compared to 26% who majored in the social sciences, compared to 37% who majored mathematics/computer science/natural science. In addition, those who did not prepare to teach but became teachers were much more likely to have scored in the top quartile (35 percent) than those who prepared to teach and became teachers (14 percent) (NCES, 2001).

Experience

In general, studies of the effects of teacher experience on student achievement suggest a positive effect. For instance, Rowan (2002) found a significant effect of teaching experience on reading and math outcomes in elementary school, with larger effects for later elementary school than early elementary school. Likewise, Greenwald, Hedges, and Laine (1996), in their large meta-analysis of the literature on school resources and student achievement, found significant effects of teacher experience.

Masters' degrees

Many districts and states provide incentives for teachers to return to the classroom to obtain advanced degrees in education. The bulk of evidence on this policy is that there are no differential gains across classes taught by teachers with a Masters' degree or other advanced degree in education compared to classes taught by teachers who lack such degrees.

Intensive and focused in-service training

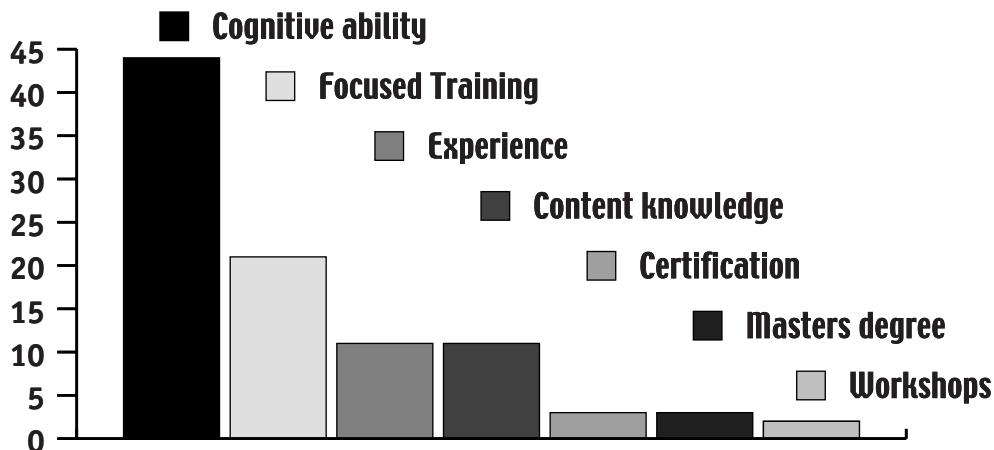
Although the literature on professional development is voluminous, there are only a few high quality studies relating teacher professional development experiences to student outcomes. Recommendations for “high quality” professional development tend to emphasize the importance of more intense, content-focused experiences (i.e., not one-day generic workshops), as well as more opportunities for peer collaboration and more structured induction experiences for new teachers. These recommendations are reasonable, but are supported by little more than anecdotal evidence, inferences based on theories of learning, and survey data indicating that teachers feel they get more from such experiences than from typical workshops.

One relatively strong study supporting the value of focused professional development is by Cohen and Hill (2000). These investigators compared the effects of teacher participation in professional development specifically targeted to a mathematics education reform initiative in California compared to teacher participation in special topics and issues workshops that were not linked to the content of the mathematics initiative (e.g., workshops in techniques for cooperative learning). The more time teachers spent in targeted training on the framework and curriculum of the mathematics reform, the more their classroom practice changed in ways that were consistent with the mathematics reform, and the more they learned about the content and standards for that reform. Teachers who participated in special topics and issues workshops showed no change in their classroom practice or knowledge related to the reform. Teachers who participated in the focused training and whose classroom practice moved towards incorporating the framework of the new math initiative had students who scored higher on a test of the math concepts imparted by the new curriculum.

This study and a couple of others (Wiley and Yoon, 1995; Brown, Smith, and Stein, 1996; and Kennedy, 1998) suggest that when professional development is focused on academic content and curriculum that is aligned with standards-based reform, teaching practice and student achievement are likely to improve.

Summary of the effects of teacher characteristics on student achievement

The figure that follows attempts to summarize the relative strength of each of the dimensions of teacher quality I have reviewed. The heights of the bars in the graph should not be taken as exact or specific to any particular research study. Rather they are intended simply to summarize graphically the conclusions I have drawn in the preceding narrative.



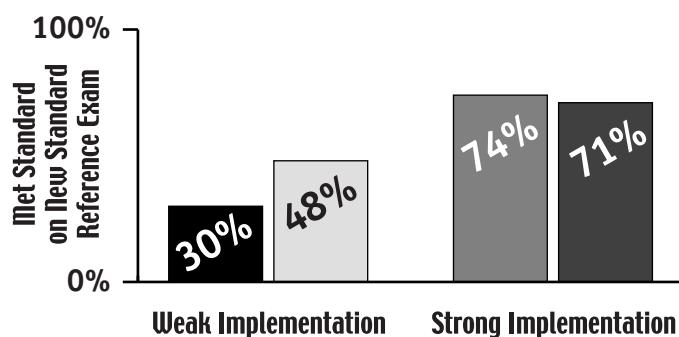
Main effects

All of the research reviewed to this point is correlational in nature and focuses on differences across teachers. The history of this line of research flows from attempts to demonstrate that teachers and classrooms make a difference, to determining how much of a difference they make, to trying to identify characteristics of teachers that contribute to those differences. Within psychology, this is called differential psychology or the study of individual differences.

There is another tradition within psychology that is relevant to attempts to improve teacher quality. That is the experimental tradition. It looks not for individual differences among teachers but for interventions that raise the effectiveness of all teachers. These are called main effects. Unfortunately experimental methods have not yet found their way to research on teacher training. Even so there are data of a weaker nature that suggest experiences and policies that can produce main effects, i.e., can raise the performance of all teachers and through them the achievement of all students. These data demonstrate the effects of the contexts in which teachers work. There are many dimensions to the context of teaching. Here I focus on the components of standards-based educational reform that are embodied in the ESEA reauthorization and the ongoing practice of many states. These components are: 1) learning standards for each academic subject for each grade, 2) assessments that are aligned to those standards, and 3) provisions for holding educators accountable for student learning. For standards-based reform to work there is reason to think that two additional components are necessary: 1) teachers must be provided with curriculum that is aligned with the standards and assessments; and 2) teachers must have professional development to deliver that curriculum.

We can see the effect of curriculum in the next figure. Three schools in Pittsburgh that were weak implementers of a standards-based math curriculum were compared with three schools with similar demographics that were strong implementers. Note that racial differ-

ences were eliminated in the strong implementation schools, and that performance soared. There is no reason to believe that any of the individual differences in teachers previously described, such as cognitive ability or education, differed among the weak implementation schools versus the strong implementation schools. Yet the teachers in the strong implementation schools were dramatically more effective than teachers in the weak implementation schools. Thus a main effect of curriculum implementation swamped the effects of individual differences in background among teachers.



We see this effect on a larger scale in a database developed by the American Institutes of Research under contract to the U.S. Department of Education. The database includes academic achievement data and demographic data on each school in 48 different states that have their own assessment systems. The Education Trust has analyzed the data to ask the question of how many high-poverty and high-minority schools have high student performance. They have identified 4,577 high-flying schools nationwide that are in the top third of poverty in their state and also in the top third of academic performance. Whatever these schools are doing to perform so well, and we need to understand that better than we do now, it is very unlikely that they have teachers who are dramatically different from teachers in less effective schools on the individual differences previously surveyed. Again, there is a main effect, something going on in the school as a whole that affects the practice of all teachers in the school, and raises student achievement accordingly.

The next table examines main effects at a higher level, in this case for states. Here we see 4th grade math gains on the National Assessment of Educational Profess for African Americans between 1992 and 1996 for the United States as a whole and for four states (Massachusetts, Texas, and Michigan) that beat the national increase by a substantial margin.

United States: + 8

Massachusetts: +14

Texas: + 13

Michigan: + 13

The next figure continues this same theme by demonstrating how North Carolina out-paced the United States as a whole in gains in 4th grade reading between 1992 and 1998.

	United States	North Carolina
Overall	0	+5
African American	+1	+6
Latino	-4	+4
White	+2	+6

Again, something is going on that generates better performance from all teachers regardless of the individual differences in education and cognitive abilities they bring to the classroom.

Putting it all together

Summarizing the material reviewed, we see that teachers matter and differ in effectiveness. The most important influence on individual differences in teacher effectiveness is teachers' general cognitive ability, followed by experience and content knowledge. Masters' degrees and accumulation of college credits have little effect, while specific coursework in the material to be taught is useful, particularly in more advanced subjects. Specific, curriculum-focused and reform-centered professional development appears to be important to effective instruction. Context studies tell us that all teachers can do a better job when supported by good curriculum, good schools, and good state policy. With the exception of the role of certification, these research findings align well with the provisions of ESEA.

There is an irony in demonstrating that teachers are important by showing that students' academic achievement is dependent on the teachers they are assigned. In other fields, substantially variation in performance among professionals delivering the same service is seen as a problem to be fixed. For example, we would not tolerate a system in which airline pilots varied appreciably in their ability to accomplish their tasks successfully, for who would want to be a passenger on the plane with the pilot who is at the 10th percentile on safe landings. Yet the American system of public education is built on what Richard Elmore has called the ethic of atomized teaching: autonomous teachers who close the doors to their classrooms and teach what they wish as they wish. The graphs from the value-added studies tell us what happens when a child has the bad luck to be assigned to a teacher whose approach doesn't work. Variation in teacher effectiveness needs to be reduced substantially if our schools are going to perform at high levels.

There are three routes to that goal suggested by the research I have reviewed. First we can be substantially more selective in the cognitive abilities that are required for entry into the teaching profession. Second, we can provide pre-service and in-service training that is more focused on the content that teachers will be delivering and the curriculum they will be

using. Third, we can provide a much better context for teachers to do their work. One important context is in the form of systems that link and align standards, curricula, assessment, and accountability. These policy directions are not conceptually incompatible, but each requires resources. We need better research to inform policy makers on the costs and benefits of each approach.

We are at the beginning of an exciting new period in teaching, one in which previous assumptions and ways of doing business will be questioned. As we build a solid research base on this topic, one that is more specific and experimental than we have currently, we should be much better able to provide effective instruction for all children. My hope and expectation is that when my sons have children in school they will not have to experience the anxieties nor engage in the machinations my wife and I went through each year as we tried to get our children assigned to what we believed were the best teachers in the next grade. Individual differences in teachers will never go away, but powerful instructional systems and new, effective forms of professional development should reduce those differences to the point that every teacher should be good enough so that no child is left behind.

REFERENCES

- Brewer, D. and Goldhaber, D.D. (2000). Does teacher certification matter? High school teacher certification status and student achievement. *Educational Evaluation and Policy Analysis*, 22, 129-145.
- Brown, C., Smith, M., & Stein, M. (1996, April). *Linking Teacher Support to Enhanced Classroom Instruction*. Paper presented at the American Educational Research Association, New York, NY.
- Chiang, F.S. (1996). *Teacher's ability, motivation and teaching effectiveness*. Unpublished doctoral dissertation, University of Michigan, Ann Arbor.
- Cohen, D.K. and Hill, H.C. (2000). Instructional policy and classroom performance: The mathematics reform in California. *Teachers College Record*, 102 (2), 294-343.
- Coleman, J. et al. (1966). Equality of Educational Opportunity, Washington DC: Government Printing Office.
- Darling-Hammond, L. (1999). *Teaching and Knowledge: Policy issues posed by alternate certification for teachers*. Seattle, WA: Center for the Study of Teaching and Policy, University of Washington.
- Ehrenberg, R. and Brewer, D. (1994). Do School and Teacher Characteristics Matter? Evidence from High School and Beyond. *Economics of Education Review*, 14, 1-23.
- Ferguson, R. and Ladd, H. (1996). How and Why Money Matters: An Analysis of Alabama Schools. In H. Ladd (ed). *Holding Schools Accountable*. Washington, DC: Brookings Institution, 265-298.
- Goldhaber, D. and Brewer, D. (1998). Why should we reward degrees for teachers. *Phi Delta Kappan*, October 1998, 134-138.
- Greenwald, R., Hedges, L., & Laine, R. (1996). The Effect of School Resources on Student Achievement. *Review of Educational Research*, 66, 361-396.
- Jordan, H.R., Mendro, R., & Weerasinghe, D. (1997). *Teacher effects on longitudinal student achievement: A preliminary report on research on teacher effectiveness*. Paper presented at the National Evaluation Institute, Indianapolis, IN.
- Kain, J. and Singleton, K. (1996). Equality of Education Revisited. *New England Economic Review*, May-June, 87-111.
- Kennedy, M. (April 1998). *Form and Substance in Inservice Teacher Education*. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

- Miller, J., McKenna, M., & McKenna, B. (1998). A comparison of alternatively and traditionally prepared teachers. *Journal of Teacher Education*, 49, 165-176.
- Monk, D. H. (1994). Subject Area Preparation of Secondary Mathematics and Science Teachers and Student Achievement. *Economics of Education Review*, 13, 125-145.
- Monk, D. and King, J. (1994). Multilevel Teacher Resource Effects on Pupil Performance in Secondary Mathematics and Science. In Ronald G. Ehrenberg (ed.), *Choices and Consequence*. Ithaca, NY: ILR Press.
- National Center for Education Statistics (2001). *The Condition of Education, 2001*. Washington, DC: U.S. Department of Education.
- Rowan, B. (2002). *What Large-Scale, Survey Research Tells Us About Teacher Effects on Student Achievement: Insights From the Prospects Study of Elementary Schools*. Ann Arbor: University of Michigan (unpublished).
- Rowan, B., Chiang, F.S., & Miller, R. J. (1997). Using Research on Employee's Performance to Study the Effects of Teacher on Students' Achievement. *Sociology of Education*, 70, 256-284.
- Sanders, W. and Rivers, J. (November 1996). *Cumulative and Residual Effects of Teachers on Future Student Academic Achievement*. Knoxville, TN: University of Tennessee Value-Added Research and Assessment Center.
- Scheerens, J. and Bosker, R. (1997). *The Foundations of Educational Effectiveness*. New York: Pergamon.
- Wiley, D. and Yoon, B. (1995). Teacher Reports of Opportunity to Learn: Analyses of the 1993 California Learning Assessment System. *Educational Evaluation and Policy Analysis*, 17, 355-370.

APPENDIX B:

Overview of the No Child Left Behind Act, Public Law 107-110, Section 9101(23).

First, it establishes the definition of “highly qualified” for all teachers of core academic subjects:

The term ‘highly qualified’—

(A) when used with respect to any public elementary school or secondary school teacher teaching in a State, means that—

(i) the teacher has obtained full State certification as a teacher (including certification obtained through alternative routes to certification) or passed the State teacher licensing examination, and holds a license to teach in such State, except that when used with respect to any teacher teaching in a public charter school, the term means that the teacher meets the requirements set forth in the State’s public charter school law; and

(ii) the teacher has not had certification or licensure requirements waived on an emergency, temporary, or provisional basis;

Therefore, except for charter school teachers, all teachers of core academic subjects must have full state certification or licensure to be considered “highly qualified.” But new teachers of core academic subjects face even stricter requirements:

[The term ‘highly qualified’—]

(B) when used with respect to—

(i) an elementary school teacher who is new to the profession, means that the teacher —

(I) holds at least a bachelor’s degree; and

(II) has demonstrated, by passing a rigorous State test, subject knowledge and teaching skills in reading, writing, mathematics, and other areas of the basic elementary school curriculum (which may consist of passing a State-required certification or licensing test or tests in reading, writing, mathematics, and other areas of the basic elementary school curriculum); or

(ii) a middle or secondary school teacher who is new to the profession, means that the teacher holds at least a bachelor’s degree and has demonstrated a high level of competency in each of the academic subjects in which the teacher teaches by—

(I) passing a rigorous State academic subject test in each of the academic subjects in which the teacher teaches (which may consist of a passing level of performance on a State-required certification or licensing test or tests in each of the academic subjects in which the teacher teaches); or

(II) successful completion, in each of the academic subjects in which the teacher teaches, of an academic major, a graduate degree, coursework equivalent to an undergraduate academic major, or advanced certification or credentialing;

Notice that these additional requirements focus entirely on rigorous subject matter preparation, demonstrated either through adequate performance on a test or through successful completion of a major, graduate degree, or advanced credentialing. Next, the law provides further detail on the definition of 'highly qualified' as it applies to existing teachers of core academic subjects:

[The term 'highly qualified'—]

(C) when used with respect to an elementary, middle, or secondary school teacher who is not new to the profession, means that the teacher holds at least a bachelor's degree and—

(i) has met the applicable standard in clause (i) or (ii) of subparagraph (B), which includes an option for a test; or

(ii) demonstrates competence in all the academic subjects in which the teacher teaches based on a high objective uniform State standard of evaluation that—

(I) is set by the State for both grade appropriate academic subject matter knowledge and teaching skills;

(II) is aligned with challenging State academic content and student academic achievement standards and developed in consultation with core content specialists, teachers, principals, and school administrators;

(III) provides objective, coherent information about the teacher's attainment of core content knowledge in the academic subjects in which a teacher teaches;

(IV) is applied uniformly to all teachers in the same academic subject and the same grade level throughout the State;

(V) takes into consideration, but not be based primarily on, the time the teacher has been teaching in the academic subject;

(VI) is made available to the public upon request; and

(VII) may involve multiple, objective measures of teacher competency.

APPENDIX C:

Issues in Implementing Title II Requirements for Data Collection and Reporting

Section 207 of Title II of the Higher Education Act, as amended in 1998, requires the Department of Education (ED) to set up an accountability reporting system for institutions of higher education with teacher preparation programs. ED (and its National Center for Education Statistics) was charged with developing “key definitions for terms, and uniform reporting methods (including key definitions for the consistent reporting of pass rates)...” for this data system. The result was the Department’s Reference and Reporting Guide for Preparing State and Institutional Reports on the Quality of Teacher Preparation found at www.title2.org. This guide provides instructions for Title II reporting.

Section 207 requires the submission of three annual reports on the quality of teacher preparation: institutions of higher education must report to their states; states must report to the Secretary of Education; and the Secretary of Education must report to Congress and the public. The report represents the second year of data collection for Title II. Institutional reports were submitted April 8, 2002, and the state reports were submitted October 7, 2002.

In their reports, institutions must include the pass rates of their graduates or program completers on required state teacher assessments as well as program information such as the number of students in their teacher preparation programs and the faculty-student ratio in supervised practice teaching. In addition to submitting this information to the state where they are located, institutions are also required to release this information to potential program applicants, secondary school guidance counselors and prospective employers of program graduates through publications such as catalogs and other promotional materials.

States’ reports are required to include the pass rates of graduates on state assessments, ranked in quartiles, by their institution, as well as information on state teacher licensure and certification requirements, state assessments and their cut (passing) scores, and alternative routes to certification. States must also report the extent to which they waived requirements for certification in their teaching force.

State reporting was done through a Web-based reporting system in which ED’s contractor, Westat, prefilled as much information as possible from publicly available administrative data sources. After the states submitted the reports and the contractor reviewed them for completeness, ED released them in November on the World Wide Web at www.title2.org. Reflecting the federal commitment to reduce paperwork, the collection and dissemination of the Title II state reports was completely paperless.

While much information in the state reports came from existing administrative records, the Title II data collection required new efforts by institutions and states in reporting a number of items. Some of the challenges involved the use of new definitions required by the system, and some involved other aspects of the data collection process.

PROGRAM COMPLETERS AND THEIR PASS RATES

Section 207 requires institutions of higher education to report the pass rate of their graduates on state teacher tests. Here, the Department defined the term “graduate” as a program completer because many graduates of teacher preparation programs do not get a degree but rather a certificate or some other evidence of program completion. This definition specified that those who are reported as program completers for Title II purposes cannot be identified by their institutions on the basis of the institution issuing the person a recommendation for licensure. Program completers also may not be identified on the basis of passing a state teacher test unless it was a state or institutional condition for graduation or program completion. Because this federal definition is unlike the definition that most institutions and states use in identifying those who complete their programs, substantial confusion occurred initially in identifying program completers, which was the first step in the Title II data collection process.

This definition of a program completer also raised concern among institutions, which do not require passing state tests for graduation or program completion. Institutions requiring passing state tests for graduation will report 100 percent pass rates, but many institutions without such a requirement will not have 100 percent pass rates. Thus in the state rankings, institutions without such a requirement may well rank lower than those that do. Many of those institutions without a requirement to pass state tests argue that the value added by their programs to their students’ knowledge and skills is just as great as that added by institutions with the requirement. But instead of incorporating into their academic requirements the state requirement for passing a test in order to teach, they allow the state to eliminate all those who do not pass required tests. A number of institutions told us informally that they would consider making passing the state test a condition of program completion in the future, suggesting that average pass rates for institutions reported in Title II will increase over time.

Title II also called for information on which institutions required passing a state test for admission, as a condition to be allowed to practice teach, or for graduation for this year’s cohort of test-takers (see www.title2.org). This information will allow tracking over time those institutions changing their requirements for passing state tests.

Some have argued that the value of the pass rate data reported through the Title II system will erode if more and more institutions require passing state tests as a condition for program completion. One response in data collection might be to require not only the highest pass rate achieved by program completers but also their pass rate the first time they took the test. This is a common practice in other professions, including results on state bar examinations taken by graduates of law schools. Reporting the pass rates the first and last time the state tests are taken would indicate the improvement achieved before graduation in cases where institutions require students to pass the test to graduate.

A more technical issue that could also arise in the future concerns the calculation of pass rates. Although pass rate calculations do not appear to have been a problem this year, in the future they may become more difficult. Pass rates for program completers of institutions of higher education are now calculated by the Educational Testing Service, National Evaluation Systems or the state in which the institution is located. The calculation of the pass rate for any given cohort in the year of their program completion is relatively straightforward for the year in which they complete their program. Thus, ED provided only general guidance to the organizations doing the calculation for this first cohort.

But in the future when cumulative pass rates covering a three-year period need to be calculated, complications will arise because changes will occur in the tests and the passing scores required by the different states. Agencies calculating pass rates will need to make numerous decisions as to how to incorporate these new requirements along with existing requirements into algorithms for pass rate calculations. As a result of having several different organizations calculating pass rates, discrepancies in procedures across the states may occur.

ALTERNATIVE ROUTES TO CERTIFICATION

Alternative routes to certification or licensure also posed a special challenge to states. States have not routinely tabulated or reported information about these routes in the past. States have also never previously been required to report the pass rates on state tests of those seeking certification through alternative routes. As with regular certification, ED now allows states to define alternative routes. Therefore, there is little comparability of these routes across states. Without a standard definition, the Department did not collect uniform information on the characteristics of these routes or the individuals who participated in them.

The Title II system requires states and others with alternative routes to report pass rates separately for alternative and regular routes to certification. Of the 44 states (including Puerto Rico) reporting they had established alternative routes, 25 provided complete pass rates. In the non-reporting states:

- Michigan (Model Process and Standards for Michigan's Alternative Routes to Teacher Certification), Nevada, New Mexico, North Carolina, and Oregon did not have alternative route completers for the 2000-2001 cohort.
- West Virginia does not currently have an active alternative route.
- California, Illinois, Kansas, Michigan (The Limited License To Instruct pilot), Pennsylvania, and Texas (IHE completers) reported their alternative route pass rates with their traditional route completers and are inconsistent with the Title II reporting requirements.
- Alabama does not require basic skills assessments for completing alternative routes.

- Idaho, Iowa, North Dakota, South Dakota, Utah, Washington, and Wyoming do not offer statewide testing program for teacher certification.
- Massachusetts did not provide state summary pass rates for alternative route completers.

TRADITIONAL ROUTE TEACHER ASSESSMENTS

Title II collected information on tests required by states for initial teacher certification or licensure. Sometimes statewide teacher tests are used for admissions into teacher preparation programs and not for teacher certification per se. Therefore, states may not be required to report results on a particular testing battery used in their state. This is most common with basic skills assessments. According to supplemental information collected from state Web sites and publications, Alabama, Kentucky, Mississippi, Nebraska, Oklahoma, Tennessee, West Virginia and Wisconsin require use of basic skills tests in program admission but not for state certification. These states were not required to submit pass rates information on their basic skills assessments, although teacher candidates are required to take them as a condition of admission in teacher preparation programs in the state. Testing companies routinely include results from these tests from these states in their national statistics. Visit www.title2.org for additional information on state assessment policies.

CERTIFICATION AND WAIVERS

ED's guide for Title II reporting allows initial teacher certificates or licenses to be defined by states, using National Association of State Directors of Teacher Education and Certification (NASDTEC) standards as guidance. NASDTEC's guidance is somewhat ambiguous in that level one (initial) certificates are issued to applicants who have completed an approved program (i.e., met state educational requirements) but have not yet completed ancillary requirements that must be met prior to the issuance of a level two certificate. This definition along with the overarching allowance for the certificates to be defined by the states has led to variance in its application across states.

Some states have broadly interpreted the term "ancillary requirements" to allow new teachers regardless of educational background into the count of those receiving an initial certificate. Typically, states place teachers who have not completed all of their pedagogy courses or passed all required assessments on emergency or temporary licenses. However, for Title II purposes, some states consider these conditions as ancillary and have reported the licenses as their (full) initial certificates. The extent of this type of reporting is not known because there is no comprehensive database of certification requirements, sorted by state, with which to compare the Title II reported information. This type of variation across states affects reporting on the number of new teachers getting initial certificates versus those teaching on waivers.

Title II requires states to report the extent to which their teachers were on waivers—that is, teaching on the basis of an emergency, temporary or provisional license, not on a full initial or higher license or certificate. Although, as noted, above states have their own definitions for what constitutes a certified teacher and hence one teaching on a waiver, Title II established a national definition for waivers. Use of this definition required a number of states to alter their data systems and in some cases to collect new data. Most states reported difficulty in meeting the Title II waiver definition. Common problems cited by states included:

- Defining away their emergency permits or waivers. As we discussed above, states define what constitutes an initial certificate. Some states have interpreted the requirements broadly by including all teachers, regardless of educational background, in the count of those holding some form of “first certificate.” In reviewing Web sites and other published materials, we believe that the District of Columbia and Iowa may have included certificates normally considered to be provisional in their description of initial certificates, and therefore, excluded these teachers from their waiver count. The District of Columbia did not report teachers on a provisional license. Iowa failed to report the existence of a One-Year Conditional License.
- Inability to remove teachers certified in other states from the waiver count. Many states consider teacher who have not met the state’s specific certification requirements to be on waivers, even if they were previously certified in another state. For Title II purposes, any teacher with any initial certificate is considered “fully certified”. Twenty-nine states were unable to remove teachers initially certified in other states from their waiver counts.
- Not being able to disaggregate out-of-field teachers or teachers licensed in other states from the total waiver counts. It is common for states to put teachers who transfer from other states or who are not trained in their primary teaching field on emergency licenses, certificates or permits until they can meet all state requirements.
- No definition of what constitutes a long-term substitute. States are required to report the number of long-term substitutes in the Title II waiver counts. Several states reported that they did not have a common definition for the length of time a teacher must work before he or she is considered to be employed long term as a substitute. Other states reported that districts hire substitutes with little or no state control and that the numbers of substitutes are not reported to the state education agency.
- Not being able to take a snapshot of the number of teachers working on waivers as of October 1, 2001. When NCES developed the waiver definition, it assumed that states would collect the data as part of their annual fall district-level enrollment and staffing surveys. NCES believed that states would ask districts to report the number of teachers working on waivers on or about October 1, 2001. However, most states collect these data through the teacher certification or licensure offices, maintaining information on the full roster of teachers who applied for and received emergency or temporary licensure throughout the year. Thirty states reported using the snapshot method with the point-in-time dates ranging from 11/5/2000 to 10/1/02. Twenty-three states reported the full year’s roster of teachers on waivers.

- Not being able to report on the number of noncertified teachers with content expertise. Few states were able to provide counts of the number of teachers on waivers who had content expertise. Content expertise is defined as having a major or minor in some teaching field or passing an assessment in the subject. The number of states reporting content expertise information by subject area ranged from 36 in bilingual education to 40 in foreign language and science.

In order to bring the Title II definition in line with the NCLB Highly Qualified Teacher definition, the Department has proposed changing the way the waiver data are collected. The proposed definition, now in Office of Management and Budget (OMB) review is:

The number of classroom teachers (by specified content areas) teaching in a school year with a temporary, provisional, or emergency permit, license, or other authorization that permits an individual to teach in a public school classroom without having received an initial certificate or license from that state. Those teachers participating in alternative routes who meet the criteria for being highly qualified under the No Child Left Behind Act are excluded from being counted as on a waiver. Also excluded are those teachers who are short- or long-term substitute teachers (as defined by the state), but included are those who are regular full-time or part-time classroom teachers.

The content areas are the core content areas defined by the No Child Left Behind Act plus special education, bilingual education/ESL, and career/technical education.

GENERAL NOTES AND DATA LIMITATIONS

Many of the items on the Title II state data collection instrument were open-ended questions. Where possible, the Department attempted to develop constructs or analytic frameworks to summarize information from states. The absence of a response by a state does not, however, necessarily mean that a state does not have a particular initiative, regulation or policy but rather the state used a different approach to addressing the question than the analysis used for the secretary's report. Greater specificity and detail in Title II data items may be necessary to ensure comprehensive and comprehensible data are collected in the future.

APPENDIX D:

Data Tables

APPENDIX D1. SUMMARY OF REGULAR ROUTE PASS RATES: 2000-2001

State	Summary					Basic skills				
	# of institutions ^a	# Tested	# Passing	Pass rate (%)	Range (%)	# of institutions ^a	# Tested	# Passing	Pass rate (%)	Range (%)
Alabama ^b										
Alaska	5	214	212	99	99 - 100	5	214	212	99	99 - 100
Arizona	10	439	376	86	70 - 96					
Arkansas	17	1,231	1,231	100	100 - 100	17	1,180	1,180	100	100 - 100
California	83	18,728	18,205	97	89 - 100	83	18,721	18,685	100	98 - 100
Colorado	15	1,898	1,748	93	86 - 100					
Connecticut	14	1,658	1,562	94	83 - 100	14	1,038	1,033	100	98 - 100
Delaware	4	459	413	90	51 - 100	4	459	413	90	51 - 100
District of Columbia	7	288	227	79	40 - 95	7	278	232	83	50 - 100
Florida	29	4,929	4,749	96	83 - 100	29	4,126	4,045	98	84 - 100
Georgia	34	2,809	2,768	99	70 - 100	34	2,125	2,030	96	50 - 100
Hawaii	5	415	356	86	69 - 91	5	400	396	99	97 - 100
Idaho ^c										
Illinois	55	8,690	8,484	98	88 - 100	55	8,633	8,596	100	94 - 100
Indiana	38	4,191	3,972	95	75 - 100	38	4,088	3,896	95	74 - 100
Iowa ^c										
Kansas	22	1,713	1,670	97	83 - 100	22	1,664	1,650	99	83 - 100
Kentucky ^b	27	2,166	2,014	93	36 - 100					
Louisiana	19	1,961	1,753	89	32 - 100	19	1,904	1,886	99	93 - 100
Maine	14	561	472	84	64 - 100	14	561	472	84	64 - 100
Maryland	21	2,076	1,830	88	45 - 100	21	2,017	1,914	95	61 - 100
Massachusetts	55	3,215	2,783	87	53 - 100	55	3,203	2,972	93	70 - 100
Michigan ^d	32	6,516	6,516	100	100 - 100	32	6,043	6,043	100	100 - 100
Minnesota	26	3,380	3,315	98	92 - 100	26	3,380	3,315	98	92 - 100
Mississippi ^b	15	1,382	1,347	97	89 - 100					
Missouri	36	3,622	3,462	96	72 - 100					
Montana	8	704	702	100	98 - 100	8	704	702	100	98 - 100
Nebraska ^b										
Nevada	7	851	805	95	78 - 100	7	772	746	97	81 - 100
New Hampshire	14	676	646	96	70 - 100	14	673	665	99	90 - 100
New Jersey	21	3,267	3,181	97	94 - 100					
New Mexico	7	859	793	92	85 - 100	7	838	783	93	89 - 100
New York	104	16,241	15,203	94	40 - 100					
North Carolina	43	4,927	4,746	96	86 - 100	41	2,645	2,650	100	90 - 100
North Dakota ^c										
Ohio	51	7,562	6,728	89	31 - 100					
Oklahoma ^b	18	1,825	1,694	93	85 - 100	18	1,805	1,764	98	88 - 100
Oregon	16	1,573	1,573	100	100 - 100	16	1,573	1,573	100	100 - 100
Pennsylvania	86	9,933	8,334	84	25 - 100	86	9,758	9,013	92	43 - 100

APPENDIX D1. SUMMARY OF REGULAR ROUTE PASS RATES: 2000-2001 CONTINUED

State	Summary					Basic skills				
	# of institutions ^a	# Tested	# Passing	Pass rate (%)	Range (%)	# of institutions	# Tested	# Passing	Pass rate (%)	Range (%)
Rhode Island	8	800	721	90	78 - 99	6	535	501	94	83 - 98
South Carolina	29	1,878	1,736	92	62 - 100	29	1,925	1,925	100	100 - 100
South Dakota ^c										
Tennessee ^{b,e}	36	2,791	2,580	92	35 - 100					
Texas	69	11,094	9,772	88	60 - 100	69	11,094	11,094	100	100 - 100
Utah ^c										
Vermont	15	485	445	92	71 - 100	15	457	417	91	63 - 100
Virginia	37	2,465	2,267	92	50 - 100	37	2,454	2,300	94	50 - 100
Washington ^c										
West Virginia ^b	18	1,180	1,180	100	100 - 100					
Wisconsin ^b										
Wyoming ^c										
Guam	1	263	215	82	82 - 82	1	263	215	82	82 - 82
Puerto Rico	30	1,937	1,659	86	50 - 98	30	1,935	1,718	89	56 - 100
Virgin Islands ^c										
Total	1,201	143,852	134,445	93		864	97,465	95,036	98	

^a Number of institutions includes institutions with one or more completer taking an assessment in that area.

^b Institutions in Alabama, Kentucky, Mississippi, Nebraska, Oklahoma, Tennessee, West Virginia, and Wisconsin require applicants to pass a basic skills test as a condition of admission to a teacher preparation program. These States are not required to submit their basic skills pass rates because they do not require the assessments for certification. Oklahoma has additional tests that are required for certification.

^c Idaho, Iowa, North Dakota, South Dakota, Utah, Washington, Wyoming and the Virgin Islands do not have Statewide testing programs.

^d Institutions require passing basic skills for admission. State requires passage before student teaching.

^e Number of institutions only includes institutions with 10 or more completers.

Source: Title II Data Collection—State Reports, 2002.

APPENDIX D1. SUMMARY OF REGULAR ROUTE PASS RATES: 2000-2001 CONTINUED

State	Professional knowledge					Academic content				
	# of institutions	# Tested	# Passing	Pass rate (%)	Range (%)	# of institutions	# Tested	# Passing	Pass rate (%)	Range (%)
Alabama ^b										
Alaska										
Arizona	10	359	311	87	71-100	10	306	280	92	83-100
Arkansas	17	1,124	1,124	100	100-100	17	993	993	100	100-100
California	82	12,922	12,519	97	86-100	61	1,472	1,414	96	67-100
Colorado						15	1,767	1,626	93	86-100
Connecticut						14	1,391	1,314	94	82-100
Delaware										
District of Columbia	6	35	29	83	100-100	7	107	97	91	88-94
Florida	29	4,212	4,195	100	95-100	29	3,515	3,421	97	85-100
Georgia						34	2,543	2,502	98	78-100
Hawaii	5	356	340	96	81-100	5	281	236	84	56-89
Idaho ^c										
Illinois						55	7,470	7,306	98	90-100
Indiana	6	38	38	100	100-100	38	3,712	3,671	99	78-100
Iowa ^c										
Kansas	22	1,668	1,638	98	90-100					
Kentucky ^b						27	1,895	1,758	93	36-100
Louisiana	19	1,897	1,782	94	53-100	19	1,790	1,640	92	42-100
Maine										
Maryland	20	1,422	1,342	94	71-100	21	1,742	1,655	95	87-100
Massachusetts						55	2,596	2,330	90	53-100
Michigan						32	8,919	8,919	100	100-100
Minnesota										
Mississippi ^b	15	1,376	1,367	99	90-100	15	1,254	1,230	98	89-100
Missouri	13	52	52	100	100-100	36	3,094	2,937	85	75-100
Montana										
Nebraska ^b										
Nevada	4	71	62	87	85-100	6	202	186	92	76-99
New Hampshire						13	119	96	81	58-92
New Jersey						21	3,291	3,203	97	94-100
New Mexico	7	698	675	97	91-100					
New York	104	15,835	15,250	96	60-100	104	15,980	15,193	95	44-100
North Carolina						38	3,587	3,914	92	68-100
North Dakota ^c										
Ohio	51	7,350	6,808	93	50-100	51	6,525	5,997	92	76-100
Oklahoma ^b	18	1,712	1,619	95	87-100	18	1,853	1,790	97	87-100
Oregon	13	55	55	100	100-100	16	1,192	1,192	100	100-100
Pennsylvania	86	9,196	8,496	92	41-100	86	8,389	7,524	90	63-100

APPENDIX D1. SUMMARY OF REGULAR ROUTE PASS RATES: 2000-2001 CONTINUED

State	Professional knowledge					Academic content				
	# of Institutions ^a	# Tested	# Passing	Pass Rate (%)	Range (%)	# of Institutions ^a	# Tested	# Passing	Pass Rate (%)	Range (%)
Rhode Island	8	266	220	83	69-100					
South Carolina	28	789	702	89	42-100	29	1,754	1,697	97	77-100
South Dakota ^c										
Tennessee ^{b,d}	36	2,730	2,585	95	32-100	21	968	885	91	67-100
Texas	69	10,450	9,495	91	60-100	67	10,031	9,257	92	55-100
Utah ^c										
Vermont										
Virginia						34	543	492	91	53-100
Washington ^c										
West Virginia ^b						18	1,180	1,180	100	100-100
Wisconsin ^b										
Wyoming ^c										
Guam										
Puerto Rico	30	1,924	1,752	91						
Virgin Islands ^c										
Total	698	76,537	72,456	95		1,012	100,461	95,935	95	

^a Number of institutions includes all institutions with one or more completer taking an assessment in that area.

^b Institutions in Alabama, Kentucky, Mississippi, Nebraska, Oklahoma, Tennessee, West Virginia, and Wisconsin require applicants to pass a basic skills test as a condition of admission to a teacher preparation program. These States are not required to submit their basic skills pass rates because they do not require the assessments for certification. Oklahoma has additional tests that are required for certification.

^c Idaho, Iowa, North Dakota, South Dakota, Utah, Washington, Wyoming and the Virgin Islands do not have Statewide testing programs.

^d Number of institutions only includes institutions with 10 or more completers.

Source: Title II Data Collection—State Reports, 2002.

APPENDIX D1. SUMMARY OF REGULAR ROUTE PASS RATES: 2000-2001 CONTINUED

State	Other content					Teaching special populations				
	# of institutions	# Tested	# Passing	Pass rate (%)	Range (%)	# of institutions ^a	# Tested	# Passing	Pass rate (%)	Range (%)
Alabama ^b										
Alaska										
Arizona	4					6	47	46	98	93-100
Arkansas	10	63	63	100	100-100	8	77	77	100	100-100
California	79	7,994	7,948	99	91-100					
Colorado	1	29	19	65	83-83	6	182	162	89	70-100
Connecticut	5	23	21	91	88-88	6	173	155	90	83-100
Delaware										
District of Columbia						5	48	43	90	89-89
Florida	9	40	40	100	100-100	17	468	453	97	91-100
Georgia	8	81	77	95	96-100	16	185	181	98	80-100
Hawaii	2	10	9	90		4	99	87	88	82-91
Idaho ^c										
Illinois	17	173	169	98	96-100	29	1,501	1,438	96	87-100
Indiana	12	105	102	97	89-100	12	169	168	99	98-100
Iowa ^c										
Kansas										
Kentucky ^b	11	147	142	95	83-100	11	248	214	86	79-97
Louisiana										
Maine										
Maryland						10	107	85	79	36-91
Massachusetts	5	12	11	92		21	315	304	97	91-100
Michigan	20	288	288	100	100-100	9	358	358	100	100-100
Minnesota										
Mississippi ^b	4					7	77	71	92	91-100
Missouri	18	165	164	100	96-100	17	311	309	98	96-100
Montana										
Nebraska ^b										
Nevada	1					2	20	20	100	100-100
New Hampshire										
New Jersey	3	21	20	95		1	17	17	100	100-100
New Mexico										
New York										
North Carolina	1	23	23	100	100-100	8	234	241	97	80-100
North Dakota ^b										
Ohio	32	207	207	100	100-100	38	749	723	97	81-100
Oklahoma ^a										
Oregon	13	161	161	100	100-100	10	180	180	100	100-100
Pennsylvania	35	741	731	99	92-100	43	1,454	1,295	89	62-100

APPENDIX D1. SUMMARY OF REGULAR ROUTE PASS RATES: 2000-2001 CONTINUED

State	Other content					Teaching special populations				
	# of Institutions ^a	# Tested	# Passing	Pass Rate (%)	Range (%)	# of Institutions ^a	# Tested	# Passing	Pass Rate (%)	Range (%)
Rhode Island										
South Carolina	6	25	21	84	0-100	15	139	126	91	78-100
South Dakota ^c										
Tennessee ^{b,d}	4	120	119	99	94-100	10	273	258	95	83-100
Texas	13	21	21	100		44	600	542	90	81-100
Utah ^c										
Vermont										
Virginia	2	18	18	100	100-100					
Washington ^c										
West Virginia ^b	9	39	39	100	100-100	10	61	61	100	100-100
Wisconsin ^b										
Wyoming ^c										
Guam										
Puerto Rico										
Virgin Islands ^c										
Total	324	10,506	10,413	99		365	8,092	7,614	94	

^a Number of institutions includes all institutions with one or more completer taking an assessment in that area.

^b Institutions in Alabama, Kentucky, Mississippi, Nebraska, Oklahoma, Tennessee, West Virginia, and Wisconsin require applicants to pass a basic skills test as a condition of admission to a teacher preparation program. These States are not required to submit their basic skills pass rates because they do not require the assessments for certification. Oklahoma has additional tests that are required for certification.

^c Idaho, Iowa, North Dakota, South Dakota, Utah, Washington, Wyoming and the Virgin Islands do not have Statewide testing programs.

^d Number of institutions only includes institutions with 10 or more completers.

Source: Title II Data Collection—State Reports, 2002.



APPENDIX D2. CLASSROOM TEACHERS ON WAIVERS, OVERALL AND BY POVERTY STATUS OF DISTRICT, BY STATE: 2001-2002

State	All districts					High-poverty districts					All other districts						
	Total number of teachers	Teachers on waivers				Total number of teachers	Teachers on waivers				Total number of teachers	Teachers on waivers					
		Total		With content expertise			Total		With content expertise			Total		With content expertise			
		Number	Percent	Number	Percent		Number	Percent	Number	Percent		Number	Percent	Number	Percent		
Alabama	59,299	991	1.7	511	51.6	10,081	225	2.2	116	51.6	49,218	766	1.6	395	51.6		
Alaska	8,206	37	0.5	—	—	7,967	37	0.5	—	—	239	—	—	—	—		
Arizona	44,106	2,328	5.3	725	31.1	4,984	447	9.0	142	31.8	39,122	1,882	4.8	583	31.0		
Arkansas ^a	29,590	754	2.5	246	32.6	5,071	78	1.5	18	23.1	24,519	676	2.8	228	33.7		
California	306,853	36,874	12.0	34,666	94.0	93,672	16,686	17.8	16,400	98.3	213,181	20,188	9.5	18,266	90.5		
Colorado	44,868	1,707	3.8	1,243	72.8	7,858	532	6.8	404	75.9	37,010	1,175	3.2	839	71.4		
Connecticut	51,150	529	1.0	171	32.3	16,992	181	1.1	57	31.5	34,158	348	1.0	114	32.8		
Delaware	7,633	524	6.9	16	3.1	1,249	81	6.5	1	1.2	6,384	443	6.9	15	3.4		
District of Columbia ^{a,b,c}	6,000	0	0.0	—	—	—	—	—	—	—	—	—	—	—	—		
Florida	120,592	4,021	3.3	376	9.4	4,148	183	4.4	11	6.0	116,444	3,838	3.3	365	9.5		
Georgia ^{a,b}	92,306	4,044	4.4	4,044	100.0	12,640	554	4.4	554	100.0	79,666	3,490	4.4	3,490	100.0		
Hawaii ^{a,c}	11,325	1,369	12.1	744	54.3	—	—	—	—	—	—	—	—	—	—		
Idaho ^{a,b}	13,714	571	4.2	14	2.1	1,215	79	6.5	2	2.5	12,499	603	4.8	12	2.0		
Illinois	136,170	4,365	3.2	545	12.5	46,947	3,066	6.5	334	10.9	89,223	1,299	1.5	211	16.2		
Indiana	84,357	626	0.7	—	—	28,446	394	1.4	—	—	55,911	232	0.4	—	—		
Iowa	38,893	0	0.0	—	—	13,110	0	0.0	—	—	25,783	0	0.0	—	—		
Kansas ^a	41,545	127	0.3	90	70.9	7,948	63	0.8	41	65.1	33,597	64	0.2	49	76.6		
Kentucky	38,837	375	1.0	92	24.5	7,563	19	0.3	8	42.1	31,274	356	1.1	84	23.6		
Louisiana ^b	55,526	8,289	14.9	348	4.2	9,092	2,319	25.5	113	4.9	46,434	5,970	12.9	235	3.9		
Maine ^{a,b}	16,681	786	4.7	564	71.8	2,398	126	5.3	85	67.5	14,283	660	4.6	479	72.6		
Maryland	46,584	6,940	14.9	2,713	39.1	8,127	1,656	20.4	1,290	77.9	44,446	5,384	12.1	1,423	26.4		
Massachusetts	63,515	150	0.2	—	—	30,213	50	0.2	—	—	33,302	100	0.3	—	—		
Michigan ^{a,b,d}	107,013	985	0.9	20	2.0	13,435	52	0.4	3	5.8	93,578	933	1.0	17	1.8		
Minnesota ^{a,b}	88,552	486	0.5	236	48.6	21,812	192	0.9	125	65.1	66,740	294	0.4	111	37.8		
Mississippi	32,569	939	2.9	95	10.1	5,374	252	4.7	—	—	27,195	687	2.5	—	—		
Missouri	66,693	2,145	3.2	—	—	13,045	914	7.0	—	—	53,639	1,231	2.3	—	—		
Montana	10,393	64	0.6	—	—	—	—	—	—	—	—	—	—	—	—		
Nebraska ^a	26,047	64	0.2	64	100.0	11,534	21	0.2	21	100.0	14,513	43	0.3	43	100.0		
Nevada ^a	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
New Hampshire	12,641	168	1.3	—	—	2,902	29	1.0	—	—	9,739	139	1.4	—	—		
New Jersey	102,723	1,609	1.6	1,044	64.9	35,306	1,021	2.9	675	66.1	67,417	588	0.9	369	62.8		
New Mexico	21,563	1,806	8.4	—	—	3,298	519	15.7	—	—	18,265	1,287	7.0	—	—		
New York	218,513	13,500	6.2	—	—	114,638	13,357	11.7	—	—	103,875	143	0.1	—	—		
North Carolina	87,229	14,569	16.7	9,249	63.5	10,366	2,004	19.3	1,286	64.2	76,863	12,565	16.3	7,963	63.4		
North Dakota ^b	8,603	15	0.2	15	100.0	1,007	4	0.4	4	100.0	7,596	11	0.1	11	100.0		

APPENDIX D2. CLASSROOM TEACHERS ON WAIVERS, OVERALL AND BY POVERTY STATUS OF DISTRICT, BY STATE: 2001-2002 CONTINUED

State	All districts					High-poverty districts					All other districts						
	Total number of teachers	Teachers on waivers				Total number of teachers	Teachers on waivers				Total number of teachers	Teachers on waivers					
		Total		With content expertise			Total		With content expertise			Total		With content expertise			
		Number	Percent	Number	Percent		Number	Percent	Number	Percent		Number	Percent	Number	Percent		
Ohio	112,202	2,133	1.9	2,133	100.0	42,754	1,280	3.0	1,280	100.0	69,448	853	1.2	853	100.0		
Oklahoma ^{a,b}	49,607	40	0.1	40	100.0	—	40	—	40	100.0	—	0	—	0	—		
Oregon	26,088	372	1.4	372	100.0	3,978	67	1.7	67	100.0	22,110	305	1.4	305	100.0		
Pennsylvania ^{a,b}	118,080	3,814	3.2	—	—	35,062	2,391	6.8	—	—	83,018	1,423	1.7	—	—		
Rhode Island	11,808	59	0.5	26	44.1	4,986	46	0.9	20	43.5	6,822	13	0.2	6	46.2		
South Carolina ^{a,b}	46,087	3,888	8.4	2,561	65.9	4,326	276	6.4	95	34.4	41,761	3,612	8.6	2,466	68.3		
South Dakota ^a	9,491	236	2.5	—	—	1,458	68	4.7	—	—	8,035	168	2.1	—	—		
Tennessee ^{a,b}	57,909	2,055	3.5	603	29.3	11,977	1,108	9.3	169	15.3	45,932	947	2.1	434	45.8		
Texas	288,986	36,819	12.7	11,949	32.5	64,959	9,128	14.1	2,921	32.0	224,027	27,691	12.4	9,028	32.6		
Utah ^a	23,512	532	2.3	—	—	2,390	58	2.4	—	—	21,122	474	2.2	—	—		
Vermont	8,710	205	2.4	107	52.2	—	65	—	28	43.1	—	140	—	78	55.7		
Virginia	88,609	7,067	8.0	5,617	79.5	16,023	216	1.3	124	57.4	72,586	6,851	9.4	5,493	80.2		
Washington	56,532	336	0.6	314	93.5	5,644	45	0.8	44	97.8	50,888	291	0.6	270	92.8		
West Virginia ^{a,b}	20,845	882	4.2	657	74.5	9,932	151	1.5	121	80.1	10,913	731	6.7	536	73.3		
Wisconsin ^{a,b}	60,915	623	1.0	—	—	18,241	377	2.1	—	—	42,674	246	0.6	—	—		
Wyoming ^a	6,712	56	0.8	46	82.1	830	4	0.5	—	—	5,881	52	0.9	42	80.8		
Guam	2,118	95	4.5	—	—	—	—	—	—	—	—	—	—	—	—		
Puerto Rico	39,228	881	2.2	39	4.4	—	—	—	—	—	—	—	—	—	—		
Virgin Islands ^a	1,538	1,276	83.0	498	39.0	1,538	1,276	83.0	498	39.0	—	—	—	—	—		
Total (all states)	3,129,266	173,126	5.5	82,793	47.8	776,536	61,737	8.0	27,097	43.9	2,231,330	109,192	4.9	54,813	50.2		
Total (only states reporting content data)	2,405,939	149,330	6.3	82,793	55.4	499,562	43,287	8.7	27,097	62.6	1,748,533	103,062	5.9	54,813	52.5		
Total # states reporting content data		38				34					34						

— Data not reported.

^a State did not use a snapshot method for counting the number of teachers on waivers. State used full year roster of teachers hired on waivers.

^b State was not able to exclude teachers certified in other states from its waiver count.

^c The District of Columbia and Hawaii are single local education agencies as well as state education agencies. Therefore, data cannot be provided for high and low poverty districts.

^d Michigan did not report the number of teachers on waivers employed by charter schools.

**APPENDIX D3. CLASSROOM TEACHERS ON WAIVERS, BY SELECTED SUBJECT AREAS,
BY STATE: 2001-2002**

State	Bilingual education/ESL (all levels)					Special education (all levels)					
	Total number of teachers	Teachers on waivers				Total number of teachers	Teachers on waivers				
		Total		With content expertise			Total		With content expertise		
		Number	Percent	Number	Percent		Number	Percent	Number	Percent	
Alabama	98	4	4.1	0	0.0	5,604	157	2.8	68	43.3	
Alaska	71	—	—	—	—	1,024	14	1.4	—	—	
Arizona	1,165	41	3.5	5	12.2	3,527	367	10.4	105	28.6	
Arkansas ^a	197	7	3.6	1	14.3	3,246	115	3.5	16	13.9	
California	133,147	5,910	4.4	5,899	99.8	26,365	7,595	28.8	5,967	78.6	
Colorado	1,389	173	12.5	129	74.6	3,830	288	7.5	130	45.1	
Delaware	7	0	0.0	0	—	1,597	91	5.7	0	0.0	
District of Columbia ^{a,b,c}	—	—	—	—	—	—	—	—	—	—	
Florida	845	15	1.8	12	80.0	22,666	1,147	5.1	112	9.8	
Georgia ^{a,b}	498	51	10.2	51	100.0	13,343	1,749	13.1	1,749	100.0	
Hawaii ^c	119	21	17.6	5	23.8	1,953	527	27.0	219	41.6	
Idaho ^{a,b}	245	13	5.3	0	0.0	2,137	54	2.5	0	0.0	
Illinois	2,464	598	24.3	8	1.3	23,189	446	1.9	72	16.1	
Indiana	—	7	—	7	100.0	10,423	380	3.6	—	—	
Iowa	261	0	0.0	—	—	5,175	0	0.0	—	—	
Kansas ^a	378	2	0.5	2	100.0	4,092	17	0.4	7	41.2	
Kentucky	92	10	10.9	2	20.0	6,401	209	3.3	20	9.6	
Louisiana ^b	130	17	13.1	—	—	8,191	1,852	22.6	129	7.0	
Maine ^{a,b}	77	9	11.7	—	—	2,123	219	10.3	158	72.1	
Maryland	249	103	41.4	89	86.4	5,227	1,142	21.8	0	0.0	
Massachusetts	1,826	23	1.3	—	—	10,678	69	0.6	—	—	
Michigan ^{a,b,d}	262	16	6.1	—	—	957	34	3.6	1	2.9	
Minnesota ^{a,b}	2,086	7	0.3	1	14.3	7,379	144	2.0	47	32.6	
Mississippi	13	5	38.5	0	0.0	4,949	106	2.1	1	0.9	
Missouri	242	21	8.7	—	—	10,015	519	5.2	—	—	
Montana	3	0	0.0	—	—	784	10	1.3	—	—	
Nebraska ^a	371	0	0.0	0	—	4,796	14	0.3	14	100.0	
Nevada ^a	—	—	—	—	—	—	—	—	—	—	
New Hampshire	82	1	1.2	—	—	1,708	64	3.7	—	—	
New Jersey	2,037	69	3.4	0	0.0	16,505	413	2.5	0	0.0	
New Mexico	1,368	393	28.7	—	—	3,879	546	14.1	—	—	
New York	6,601	771	11.7	—	—	29,949	2,249	7.5	—	—	
North Carolina	1,010	439	43.5	223	50.8	12,159	1,429	11.8	799	55.9	
North Dakota ^b	0	0	—	0	—	752	0	0.0	0	—	

APPENDIX D3. CLASSROOM TEACHERS ON WAIVERS, BY SELECTED SUBJECT AREAS,

State	Bilingual education/ESL (all levels)					Special education (all levels)					
	Total number of teachers	Teachers on waivers				Total number of teachers	Teachers on waivers				
		Total		With content expertise			Total		With content expertise		
		Number	Percent	Number	Percent		Number	Percent	Number	Percent	
Ohio	412	2	0.5	2	100.0	15,398	18	0.1	18	100.0	
Oklahoma ^{a,b}	—	0	—	0	—	—	0	—	0	—	
Oregon	493	69	14.0	69	100.0	3,381	65	1.9	65	100.0	
Pennsylvania ^{a,b}	—	—	—	—	—	16,251	961	5.9	—	—	
Rhode Island	383	17	4.4	—	—	2,114	8	0.4	—	—	
South Carolina ^{a,b}	216	13	6.0	1	7.7	4,841	995	20.6	190	19.1	
South Dakota ^a	8,463	210	2.5	—	—	8,514	211	2.5	—	—	
Tennessee ^{a,b}	84	1	1.2	1	100.0	7,060	366	5.2	100	27.3	
Texas	24,907	4,260	17.1	338	7.9	32,510	4,627	14.2	657	14.2	
Utah ^a	414	20	4.8	—	—	2,889	42	1.5	—	—	
Vermont	—	2	—	1	50.0	—	42	—	17	40.5	
Virginia	1,149	21	1.8	14	66.7	13,852	63	0.5	20	31.7	
Washington	—	27	—	27	100.0	7,860	53	0.7	47	88.7	
West Virginia ^{a,b}	4	4	100.0	2	50.0	3,641	676	18.6	517	76.5	
Wisconsin ^{a,b}	519	38	7.3	—	—	8,649	244	2.8	—	—	
Wyoming ^a	0	2	—	2	100.0	868	7	0.8	5	71.4	
Guam	—	—	—	—	—	—	—	—	—	—	
Puerto Rico	0	0	—	0	—	3,045	23	0.8	1	4.3	
Virgin Islands ^a	18	10	55.6	10	100.0	151	45	29.8	40	88.9	
Total (all States)	195,301	13,447	6.9	6,902	51.3	391,773	30,477	7.8	11,322	37.1	
Total (only States reporting content data)	174,860	11,911	6.8	6,902	57.9	284,896	25,160	9.0	11,322	45.0	
Total # States reporting content data	36					38					

Source: Title II Data Collection—State Reports, 2002.

**APPENDIX D3. CLASSROOM TEACHERS ON WAIVERS, BY SELECTED SUBJECT AREAS,
BY STATE: 2001-2002 CONTINUED**

State	Mathematics (middle, jr. high, high school)					Science (middle, jr. high, high school)					
	Total number of Teachers	Teachers on waivers				Total number of Teachers	Teachers on waivers				
		Total		With content expertise			Total		With content expertise		
		Number	Percent	Number	Percent		Number	Percent	Number	Percent	
Alabama	2,952	153	5.2	58	37.9	1,104	192	17.4	144	75.0	
Alaska	—	—	—	—	—	—	—	—	—	—	
Arizona	1,699	145	8.5	39	26.9	1,444	130	9.0	40	30.8	
Arkansas ^a	1,733	72	4.2	19	26.4	1,760	107	6.1	74	69.2	
California	17,385	2,438	14.0	2,255	92.5	13,676	2,237	16.4	2,194	98.1	
Colorado	3,045	148	4.9	100	67.6	2,784	158	5.7	143	90.5	
Connecticut	2,629	65	2.5	24	36.9	2,688	66	2.5	18	27.3	
Delaware	417	24	5.8	6	25.0	403	23	5.7	2	8.7	
District of Columbia ^{a,b,c}	—	—	—	—	—	—	—	—	—	—	
Florida	6,563	59	0.9	34	57.6	5,836	47	0.8	31	66.0	
Georgia ^{a,b}	4,941	253	5.1	253	100.0	4,221	273	6.5	273	100.0	
Hawaii ^c	480	47	9.8	34	72.3	508	37	7.3	34	91.9	
Idaho ^{a,b}	1,180	43	3.6	1	2.3	1,707	41	2.4	4	9.8	
Illinois	8,820	130	1.5	46	35.4	7,465	161	2.2	58	36.0	
Indiana	8,930	43	0.5	43	100.0	6,674	84	1.3	84	100.0	
Iowa	2,848	0	0.0	—	—	2,423	—	—	—	—	
Kansas ^a	4,264	16	0.4	13	81.3	3,563	13	0.4	12	92.3	
Kentucky	3,062	31	1.0	11	35.5	2,687	22	0.8	14	63.6	
Louisiana ^b	2,918	492	16.9	20	4.1	1,705	361	21.2	35	9.7	
Maine ^{a,b}	1,282	74	5.8	41	55.4	1,138	83	7.3	53	63.9	
Maryland	2,072	464	22.4	407	87.7	2,213	564	25.5	540	95.7	
Massachusetts	4,300	10	0.2	—	—	4,717	4	0.1	—	—	
Michigan ^{a,b,d}	4,416	35	0.8	—	—	4,348	31	0.7	3	9.7	
Minnesota ^{a,b}	9,207	42	0.5	31	73.8	7,855	58	0.7	46	79.3	
Mississippi	1,629	68	4.2	6	8.8	930	81	8.7	8	9.9	
Missouri	4,417	192	4.3	—	—	4,017	243	6.0	—	—	
Montana	614	5	0.8	—	—	502	13	2.6	—	—	
Nebraska ^a	846	3	0.4	3	100.0	788	1	0.1	1	100.0	
Nevada ^a	—	—	—	—	—	—	—	—	—	—	
New Hampshire	664	13	2.0	—	—	648	11	1.7	—	—	
New Jersey	6,948	44	0.6	44	100.0	4,907	79	1.6	79	100.0	
New Mexico	1,428	42	2.9	—	—	1,209	17	1.4	—	—	
New York	15,185	1,403	9.2	—	—	14,194	1,387	9.8	—	—	
North Carolina	2,557	718	28.1	535	74.5	7,539	1,135	15.1	785	69.2	
North Dakota ^b	371	0	0.0	0	—	365	3	0.8	3	100.0	

APPENDIX D3. CLASSROOM TEACHERS ON WAIVERS, BY SELECTED SUBJECT AREAS,

State	Mathematics (middle, jr. high, high school)					Science (middle, jr. high, high school)					
	Total number of Teachers	Teachers on waivers				Total number of Teachers	Teachers on waivers				
		Total		With content expertise			Total		With content expertise		
		Number	Percent	Number	Percent		Number	Percent	Number	Percent	
Ohio	5,980	152	2.5	152	100.0	6,408	244	3.8	244	100.0	
Oklahoma ^{a,b}	—	3	—	3	100.0	—	6	—	6	100.0	
Oregon	1,091	30	2.7	30	100.0	1,516	21	1.4	21	100.0	
Pennsylvania ^{a,b}	7,286	190	2.6	—	—	4,014	196	4.9	—	—	
Rhode Island	688	12	1.7	8	66.7	764	8	1.0	7	87.5	
South Carolina ^{a,b}	3,102	390	12.6	278	71.3	2,446	592	24.2	493	83.3	
South Dakota ^a	4,852	121	2.5	—	—	4,788	127	2.7	—	—	
Tennessee ^{a,b}	4,264	106	2.5	39	36.8	4,021	182	4.5	94	51.6	
Texas	20,719	2,840	13.7	709	25.0	17,349	2,695	15.5	782	29.0	
Utah ^a	1,374	51	3.7	—	—	1,124	59	5.2	—	—	
Vermont	—	16	—	6	37.5	—	16	—	13	81.3	
Virginia	5,011	56	1.1	38	67.9	4,312	47	1.1	31	66.0	
Washington	—	25	—	22	88.0	—	22	—	20	90.9	
West Virginia ^{a,b}	4,656	30	0.6	22	73.3	4,267	59	1.4	42	71.2	
Wisconsin ^{a,b}	3,622	38	1.0	—	—	3,216	40	1.2	—	—	
Wyoming ^a	356	5	1.4	4	80.0	342	3	0.9	3	100.0	
Guam	—	—	—	—	—	—	—	—	—	—	
Puerto Rico	2,044	48	2.3	2	4.2	1,915	60	3.1	7	11.7	
Virgin Islands ^a	86	55	64.0	40	72.7	83	30	36.1	44	146.7	
Total (all States)	194,933	11,440	5.9	5,376	47.0	172,583	12,069	7.0	6,485	53.7	
Total (only States reporting content data)	146,773	9,340	6.5	5,376	57.6	134,154	9,972	7.6	6,485	65.0	
Total # States reporting content data	39					40					

— Data not reported.

^a State did not use a snapshot method for counting the number of teachers on waivers. State used full year roster of teachers hired on waivers.

^b State was not able to exclude teachers certified in other states from its waiver count.

^c The District of Columbia and Hawaii are single local education agencies as well as state education agencies. Therefore, data cannot be provided for high and low poverty districts.

^d Michigan did not report the number of teachers on waivers employed by charter schools.

Source: Title II Data Collection—State Reports, 2002.

APPENDIX D4. SUMMARY OF ALTERNATIVE ROUTE PASS RATES: 2000–2001

State	Summary			Basic Skills			Professional Knowledge		
	# Tested	# Passing	Pass Rate	# Tested	# Passing	Pass Rate	# Tested	# Passing	Pass Rate
Alabama ^a									
Arkansas	56	56	100	53	53	100	55	55	100
California ^b									
Colorado	224	217	97						
Connecticut	164	159	97	59	56	95			
Delaware	—	—	—	—	—	—			
Florida	70	65	93	43	38	88	67	67	100
Georgia	1,583	1,522	96	553	523	95			
Hawaii	55	54	98	53	52	98	53	53	100
Idaho ^c									
Illinois ^b									
Iowa ^c									
Kansas ^b									
Kentucky	41	37	90						
Louisiana	505	478	95	392	388	99	426	421	99
Maine	142	142	100	142	142	100			
Maryland	12	12	100	—	—	—	11	11	100
Massachusetts ^d									
Michigan ^{b,e}									
Minnesota	15	14	93	15	14	93			
Mississippi	244	233	95				30	27	90
Missouri	28	28	100				—	—	—
Nevada ^e									
New Hampshire	107	106	99	103	103	100			
New Jersey	1,205	1,204	100						
New Mexico ^e									
New York	7,571	7,069	93				7,430	7,030	95
North Carolina ^e									
North Dakota ^c									
Ohio	33	33	100				—	—	—
Oklahoma	369	369	100	369	369	100	369	369	100
Oregon ^e									
Pennsylvania ^b									
Puerto Rico	52	40	77	52	43	83	36	33	92
South Carolina	565	460	81						

APPENDIX D4. SUMMARY OF ALTERNATIVE ROUTE PASS RATES: 2000–2001 CONTINUED

State	Summary			Basic Skills			Professional Knowledge		
	# Tested	# Passing	Pass Rate	# Tested	# Passing	Pass Rate	# Tested	# Passing	Pass Rate
South Dakota ^c									
Tennessee	69	63	91				53	45	85
Texas ^f	2,836	2,637	93	2,836	2,836	100	2,762	2,637	95
Utah ^c									
Vermont	50	49	98	—	—	—			
Virginia	304	293	96	299	290	97			
Washington ^c									
West Virginia ^g									
Wyoming ^c									
Total	16,300	15,340	94%	4,969	4,907	99%	11,292	10,748	95%

— Less than 10.

^a Alabama did not require passage of Basic Skills Test.

^b California, Illinois, Kansas, Michigan (one route), and Pennsylvania reported their alternative pass rates with the traditional pass rate data.

^c Idaho, Iowa, North Dakota, South Dakota, Utah, Washington, and Wyoming are non-testing states.

^d Massachusetts did not provide state summary level data. Institutional/program data is available in their state reports.

^e Michigan (one route), Nevada, New Mexico, North Carolina, and Oregon had no completers in the cohort year.

^f Additional students completing an alternative route are included in regular pass rates.

^g West Virginia does not currently have an active alternative route.

Note: Alternative Routes and programs are defined by state; usage of these terms varies by state. See each state's report for details.

Source: Title II Data Collection—State Reports, 2002.

APPENDIX D4. SUMMARY OF ALTERNATIVE ROUTE PASS RATES: 2000–2001 CONTINUED

State	Academic Content			Other Content			Teaching Special Populations			Portfolio		
	# Tested	# Passing	Pass Rate	# Tested	# Passing	Pass Rate	# Tested	# Passing	Pass Rate	# Tested	# Passing	Pass Rate
Alabama ^a												
Arkansas	25	25	100	—	—	—						
California ^b												
Colorado	211	205	97	13	10	77	12	11	92			
Connecticut	163	161	99									
Delaware												
Florida	51	51	100	—	—	—	—	—	—			
Georgia	551	542	98	276	257	93	203	200	99			
Hawaii							55	54	98			
Idaho ^c												
Illinois ^b												
Iowa ^c												
Kansas ^b												
Kentucky	33	31	94	—	—	—	—	—	—			
Louisiana	407	386	95									
Maine												
Maryland	11	11	100									
Massachusetts ^d												
Michigan ^{b,e}												
Minnesota												
Mississippi	224	214	96	15	15	100	—	—	—			
Missouri	13	13	100	11	11	100	—	—	—			
Nevada ^e												
New Hampshire	28	27	96									
New Jersey	1,226	1,225	100	—	—	—	—	—	—			
New Mexico ^e												
New York	7,280	6,980	96									
North Carolina ^e												
North Dakota ^c												
Ohio	51	51	100	—	—	—						
Oklahoma	369	369	100	369	369	100						
Oregon ^e												
Pennsylvania ^b												
Puerto Rico												
South Carolina	407	327	80	119	117	98	39	16	41			

APPENDIX D4. SUMMARY OF ALTERNATIVE ROUTE PASS RATES: 2000–2001 CONTINUED

State	Academic Content			Other Content			Teaching Special Populations			Portfolio		
	# Tested	# Passing	Pass Rate	# Tested	# Passing	Pass Rate	# Tested	# Passing	Pass Rate	# Tested	# Passing	Pass Rate
South Dakota ^c												
Tennessee	44	37	84				13	13	100			
Texas ^f	1,821	1,744	96	—	—	—	1,055	997	95			
Utah ^c												
Vermont										49	49	100
Virginia	94	91	97	—	—							
Washington ^c												
West Virginia ^g												
Wyoming ^c												
Total	13,009	12,490	96%	803	779	97%	1,377	1,291	94%	49	49	100%

— Less than 10.

^a Alabama did not require passage of Basic Skills Test.

^b California, Illinois, Kansas, Michigan (one route), and Pennsylvania reported their alternative pass rates with the traditional pass rate data.

^c Idaho, Iowa, North Dakota, South Dakota, Utah, Washington, and Wyoming are non-testing states.

^d Massachusetts did not provide state summary level data. Institutional/program data is available in their state reports.

^e Michigan (one route), Nevada, New Mexico, North Carolina, and Oregon had no completers in the cohort year.

^f Additional students completing an alternative route are included in regular pass rates.

^g West Virginia does not currently have an active alternative route.

Note: Alternative Routes and programs are defined by state; usage of these terms varies by state. See each state's report for details.

Source: Title II Data Collection—State Reports, 2002.

APPENDIX D5. NUMBER OF INSTITUTIONS OF HIGHER EDUCATION, PER ALTERNATIVE ROUTE: 2002

State	Total number of institutions of higher education associated with any of State's alternative route(s) ^a	Alternate Route Name	Number of institutions of higher education associated with each route
Alabama	29	Alternative Master's Level (Fifth-Year) Baccalaureate Level	18 29
Arkansas	3	Master of Arts in Teaching	3
California	54	District intern program University Internship	8 54
Delaware	2	Delaware Alternative Routes to Certification (ARTC) Program	2
Georgia	14	(1) Georgia Alternative Preparation Program called Georgia TAPP Program (2) Post-baccalaureate Program	16
Hawaii	1	Respecialization in Special Education (SPED/RISE)	1
Idaho	6	Alternate Route Program	6
Illinois	12	Alternative Certification — 105 ILCS 5/21-5b Alternative Route to Administrative Certification 105 ILCS 5/21-5d Alternative Route to Teacher Certification 105 ILCS 5/21-5c Illinois Teacher Corps 105 ILCS 5/21-11.4	3 1 9 1
Kansas	2	Innovative and Experimental Programs	2
Kentucky	11	University-Based Alternative Certification	11
Louisiana	17	Elementary Grades 1-8, Secondary Grades, Special Education, Practitioner Teacher Program, Master's Degree Program Resource location: http://www.doe.State.la.us Master's Degree Program	17 10
Massachusetts	42	Route Two	42
Michigan		Model Process and Standards for Michigan's Alternative Routes to Teacher Certification (MARTC). 3 The Limited License To Instruct, A pilot Program	2 1
Minnesota	1	The Collaborative Urban Educator Program (CUE)	1
Mississippi	7	Master of Arts in Teaching Program	7
Missouri	3	Innovative and Alternative Professional Education Programs	3
New Mexico	4	Three Year Alternative License — College or University Program	4
New York	18	Alternative Certification Program — Transitional B Certificate	18
Oklahoma	20	Oklahoma Alternative Placement Program	20
Oregon	3	No standard name	3

APPENDIX D5. NUMBER OF INSTITUTIONS OF HIGHER EDUCATION, PER ALTERNATIVE ROUTE: 2002 CONTINUED

State	Total number of institutions of higher education associated with any of State's alternative route(s) ^a	Alternate Route Name	Number of institutions of higher education associated with each route
Pennsylvania	35	Pennsylvania offers a teacher intern program for individuals who have an existing bachelors degree.	35
Puerto Rico	30	Alternative route to teacher certification	30
South Carolina	1	Program of Alternative Certification for Educators (PACE)	1
Tennessee	38	Interim A License Interim C License Interim E License	38 3 38
Texas	26	Alternative Route to Certification	26
Virginia	3	Career Switcher Alternative Route to Licensure Program	3
Washington	6	Route 1 Route 2 Route 3	2 3 6

^a State totals are unduplicated counts of the total number of IHE's associated with a state's alternative routes.

Source: Title II Data Collection—State Reports, 2002.

APPENDIX D6. CHARACTERISTICS OF ALTERNATIVE ROUTES, BY ROUTE WITHIN STATE: 2000-2001

State	Alternative route or program name	Bachelor's degree required	Regular State assessments required	Other assessments required	Practice teaching required	Teacher of record while on route
Alabama	Alternative Master's Level (Fifth-Year)	Yes	Yes		Yes	No
	Baccalaureate Level	Yes	Yes			Yes
	Preliminary	Yes	Yes			
Arkansas	Master of Arts in Teaching	Yes	Yes		Yes	Yes
	Non-traditional Route to licensure	Yes	Yes			Yes
California	District intern program	Yes	Yes	No	Yes	Yes
	Troops-To-Teachers				Yes	
	University Internship	Yes	Yes			Yes
Colorado	Alternative Teacher Licensing Program and Teacher in Residence Programs	Yes	Yes			Yes
Connecticut	Alternate Route to Teacher Certification I (ARC I) and Alternate Route to Teacher Certification	Yes	Yes		Yes	
Delaware	Delaware Alternative Routes to Certification (ARTC) Program	Yes	Yes			Yes
Florida	State Approved Competency Based Alternative Certification Program.	Yes	Yes	Yes		Yes
Georgia	(1) Georgia Alternative Preparation Program called Georgia TAPP Program (2) Post-baccalaureate Program	Yes	Yes	Yes		Yes
Hawaii	Respecialization in Special Education (SPED/RISE)	Yes	Yes	Yes	Yes	Yes
Idaho	Alternate Route Program	Yes				Yes
Illinois	Alternative Certification -- 105 ILCS 5/21-5b	Yes	Yes	Yes	Yes	Yes
	Alternative Route to Teacher Certification 105 ILCS 5/21-5c	Yes	Yes	Yes	Yes	Yes
	Illinois Teacher Corps 105 ILCS 5/21-11.4	Yes	Yes	Yes	Yes	Yes
Iowa	Teacher Intern Program (approved in 2002; no approved programs yet)	Yes			Yes	Yes
Kansas	Innovative and Experimental Programs	Yes	Yes			Yes
	Restricted Teaching License	Yes	Yes			Yes
Kentucky	Adjunct Instructor Certification	Yes				Yes
	College Faculty Certification	Yes				Yes
	Exceptional Work Experience Certification	Yes				Yes
	Local District Training Program	Yes	Yes			Yes
	University-Based Alternative Certification	Yes	Yes			Yes
	Veterans of the Armed Services	Yes	Yes			Yes
Louisiana	Elementary Grades 1-8, Secondary Grades, Special Education, Practitioner Teacher Program, Master's Degree Program	Yes	Yes	Yes	Yes	
	Master's Degree Program	Yes	Yes	Yes	Yes	

APPENDIX D6. CHARACTERISTICS OF ALTERNATIVE ROUTES, BY ROUTE WITHIN STATE: 2000-2001 CONTINUED

State	Alternative route or program name	Bachelor's degree required	Regular State assessments required	Other assessments required	Practice teaching required	Teacher of record while on route
Maine	Transcript analysis	Yes	Yes		Yes	
Maryland	Resident Teacher Program (RTC)	Yes	Yes			Yes
Massachusetts	Route Five	Yes	Yes		Yes	Yes
	Route Four	Yes	Yes		Yes	
	Route Three	Yes	Yes		Yes	
	Route Two	Yes	Yes		Yes	
Michigan	Model Process and Standards for Michigan's Alternative Routes to Teacher Certification (MARTC).	Yes	Yes		Yes	No
	The Limited License To Instruct, a pilot program	Yes	Yes		Yes	Yes
Minnesota	The Collaborative Urban Educator Program (CUE)	Yes	Yes		Yes	Yes
Mississippi	Master of Arts in Teaching Program	Yes	Yes			
	Mississippi Alternate Path to Quality Teachers	Yes	Yes	Yes		Yes
	Teach Mississippi Institute Alternate Route	Yes	Yes			Yes
Missouri	Innovative and Alternative Professional Education Programs	Yes	Yes		Yes	Yes
	Temporary Authorization Certificate	Yes	Yes		Yes	Yes
Nevada	Nevada Administrative Code 391.057 Conditional licensure	Yes	Yes			Yes
New Hampshire	Alternative IV: Job-Embedded Option for Critical Shortage Areas, Vocational Education, and Business Administrator	Yes	Yes			Yes
	Alternative V: Job-Embedded Option for Content Majors in All Teaching Areas Except Special Education and Vocational Education	Yes	Yes			Yes
	Competency-Based Certification for Candidates Experienced in Endorsement Areas	Yes	Yes	Yes		
New Jersey	Provisional Teacher Program	Yes	Yes		Yes	Yes
New Mexico	Three Year Alternative License — College or University Program	Yes	Yes		Yes	
	Three Year Alternative License — Portfolio Route	Yes	Yes		Yes	Yes
New York	Alternative Certification Program — Transitional B Certificate	Yes	Yes		Yes	Yes
	Transcript Evaluation	Yes	Yes		Yes	Yes
North Carolina	Regional alternative licensing centers	Yes	Yes			Yes
North Dakota	Interim licensure clinical practice option.	Yes		Yes		Yes
Ohio	Conditional Permit	Yes	Yes	Yes	Yes	Yes
	Alternate Educator License	Yes	Yes		Yes	Yes
Oklahoma	Oklahoma Alternative Placement Program	Yes	Yes			
Oregon	No standard name	Yes	Yes			Yes
Pennsylvania	Teacher intern program	Yes	Yes	Yes	Yes	Yes

APPENDIX D6. CHARACTERISTICS OF ALTERNATIVE ROUTES, BY ROUTE WITHIN STATE: 2000-2001 CONTINUED

State	Alternative route or program name	Bachelor's degree required	Regular State assessments required	Other assessments required	Practice teaching required	Teacher of record while on route
Puerto Rico	Alternative route to teacher certification	Yes	Yes		Yes	
South Carolina	Program of Alternative Certification for Educators (PACE)	Yes	Yes	Yes		Yes
South Dakota	Alternative Certification	Yes	Yes		Yes	
Tennessee	Interim A License	Yes	Yes		Yes	Yes
	Interim C License	Yes	Yes		Yes	Yes
	Interim E License	Yes	Yes		Yes	Yes
Texas	Alternative Route to Certification	Yes	Yes		Yes	Yes
Utah	Alternative Preparation for Teaching program (APT)	Yes				Yes
Vermont	License By Evaluation (Peer Review)	Yes	Yes	Yes	Yes	
Virginia	Alternative Licensure Program	Yes	Yes			
	Career Switcher Alternative Route to Licensure Program	Yes	Yes		Yes	Yes
Washington	Route 1		Yes	Yes	Yes	
	Route 2	Yes	Yes	Yes	Yes	
	Route 3	Yes	Yes	Yes	Yes	
West Virginia ^a	Alternative Programs for the Education of Teachers					
Wyoming	Portfolio	Yes	Yes		Yes	
Total		72	66	18	42	51
Percent Yes		97%	89%	24%	57%	69%

^a West Virginia did not provide information on its alternative routes.

Note: Alternative routes and programs are defined by state; thus usage of these terms varies by state. See each State's report for details.

Source: Title II Data Collection—State Reports, 2002.

APPENDIX D6. CHARACTERISTICS OF ALTERNATIVE ROUTES, BY ROUTE WITHIN STATE: 2000-2001 CONTINUED

State	Alternative route or program name	Mentoring	Program supported by a private organization	Associated with Institutions of Higher Education	Tests required for entry	Program Administrator(s)
Alabama	Alternative Master's Level (Fifth-Year)	Yes		Yes		State
	Baccalaureate Level Preliminary	Yes		Yes		State
					Yes	State
Arkansas	Master of Arts in Teaching			Yes	Yes	IHE
	Non-traditional Route to licensure	Yes			Yes	State
California	District intern program		Yes		Yes	Local, district , and IHE
	Troops-To-Teachers					
	University Internship		Yes	Yes	Yes	Local and IHE
Colorado	Alternative Teacher Licensing Program and Teacher in Residence Programs				Yes	Local
		Yes				
Connecticut	Alternate Route to Teacher Certification I (ARC I) and Alternate Route to Teacher Certification				Yes	State
Delaware	Delaware Alternative Routes to Certification (ARTC) Program	Yes		Yes	Yes	State and IHE
Florida	State Approved Competency Based Alternative Certification Program.					State and district
Georgia	(1) Georgia Alternative Preparation Program called Georgia TAPP Program (2) Post-baccalaureate Program	Yes		Yes	Yes	State and district
Hawaii	Respecialization in Special Education (SPED/RISE)	Yes		Yes		State
Idaho	Alternate Route Program			Yes		State
Illinois	Alternative Certification -- 105 ILCS 5/21-5b	Yes	Yes	Yes	Yes	State
	Alternative Route to Teacher Certification 105 ILCS 5/21-5c	Yes		Yes	Yes	State
	Illinois Teacher Corps 105 ILCS 5/21-11.4	Yes		Yes	Yes	State
Iowa	Teacher Intern Program (approved in 2002; no approved programs yet)					State
Kansas	Innovative and Experimental Programs	Yes		Yes		IHE
	Restricted Teaching License	Yes		Yes		IHE
Kentucky	Adjunct Instructor Certification					State
	College Faculty Certification					State
	Exceptional Work Experience Certification					State
	Local District Training Program				Yes	Local
	University-Based Alternative Certification				Yes	IHE
	Veterans of the Armed Services				Yes	State

APPENDIX D6. CHARACTERISTICS OF ALTERNATIVE ROUTES, BY ROUTE WITHIN STATE CONTINUED

State	Alternative route or program name	Mentoring	Program supported by a private organization	Associated with Institutions of Higher Education	Tests required for entry	Program Administrator(s)
Louisiana	Elementary Grades 1-8, Secondary Grades, Special Education, Practitioner Teacher Program, Master's Degree Program		Yes	Yes	Yes	State
	Master's Degree Program					State
Maine	Transcript analysis				Yes	State
Maryland	Resident Teacher Program (RTC)	Yes	Yes		Yes	Local
Massachusetts	Route Five			Yes	Yes	State
	Route Four				Yes	District
	Route Three				Yes	District
	Route Two				Yes	IHE
Michigan	Model Process and Standards for Michigan's Alternative Routes to Teacher Certification (MARTC).	Yes		Yes	Yes	IHE
	The Limited License To Instruct, a pilot program					State, IHE, and district
Minnesota	The Collaborative Urban Educator Program (CUE)	Yes		Yes		District
Mississippi	Master of Arts in Teaching Program	Yes		Yes	Yes	IHE
	Mississippi Alternate Path to Quality Teachers					State
	Teach Mississippi Institute Alternate Route					IHE
Missouri	Innovative and Alternative Professional Education Programs	Yes		Yes		IHE
	Temporary Authorization Certificate					District and IHE
Nevada	Nevada Administrative Code 391.057 Conditional licensure	Yes			Yes	State and district
New Hampshire	Alternative IV: Job-Embedded Option for Critical Shortage Areas, Vocational Education, and Business Administrator	Yes	Yes		Yes	State
	Alternative V: Job-Embedded Option for Content Majors in All Teaching Areas Except Special Education and Vocational Education					State
	Competency-Based Certification for Candidates Experienced in Endorsement Areas					State
New Jersey	Provisional Teacher Program	Yes			Yes	State
New Mexico	Three Year Alternative License - College or University Program	Yes		Yes	Yes	IHE and districts
	Three Year Alternative License - Portfolio Route					State
New York	Alternative Certification Program - Transitional B Certificate	Yes		Yes	Yes	IHE
	Transcript Evaluation					State and IHE

APPENDIX D6. CHARACTERISTICS OF ALTERNATIVE ROUTES, BY ROUTE WITHIN STATE CONTINUED

State	Alternative route or program name	Mentoring	Program supported by a private organization	Associated with Institutions of Higher Education	Tests required for entry	Program Administrator(s)
North Carolina	Regional alternative licensing centers					State
North Dakota	Interim licensure clinical practice option.					State, district, and IHE
Ohio	Conditional Permit	Yes			Yes	State
	Alternate Educator License	Yes	Yes	Yes	Yes	State
Oklahoma	Oklahoma Alternative Placement Program			Yes	Yes	State
Oregon	No standard name			Yes		IHE and district
Pennsylvania	Teacher intern program	Yes	Yes	Yes	Yes	IHE
Puerto Rico	Alternative route to teacher certification			Yes		NA
South Carolina	Program of Alternative Certification for Educators (PACE)	Yes			Yes	State
South Dakota	Alternative Certification			Yes		State
Tennessee	Interim A License	Yes		Yes		IHE
	Interim C License	Yes		Yes		IHE
	Interim E License	Yes			Yes	IHE
Texas	Alternative Route to Certification	Yes	Yes	Yes	Yes	IHE, districts, and other
Utah	Alternative Preparation for Teaching program (APT)	Yes				State
Vermont	License By Evaluation (Peer Review)					State
Virginia	Alternative Licensure Program			Yes		State
	Career Switcher Alternative Route to Licensure Program	Yes		Yes	Yes	State
Washington	Route 1	Yes		Yes	Yes	State
	Route 2	Yes		Yes	Yes	State
	Route 3	Yes		Yes	Yes	State
West Virginia ^a	Alternative Programs for the Education of Teachers					
Wyoming	Portfolio			Yes		State
Total		38	11	39	44	
Percent Yes		51%	15%	51%	57%	

^a West Virginia did not provide information on its alternative routes.

Note: Alternative routes and programs are defined by State; thus usage of these terms varies by state. See each state's report for details.

Source: Title II Data Collection—State Reports, 2002.

APPENDIX D7. INSTITUTIONS IDENTIFIED AS AT-RISK OF BEING CLASSIFIED AS LOW-PERFORMING OR IDENTIFIED AS LOW PERFORMING: 2002

State	At-Risk	Low-Performing
Florida	None	The following teacher preparation programs at Edward Waters College: Elementary Education, Physical Education
Georgia	None	Morris Brown College
Kansas	Friends University	None
Louisiana	None	Grambling State University Southern University and A&M College Southern University-New Orleans
Mississippi	Jackson State University	
New York	Boricua College City University of New York - Medgar Evers College City University of New York - York College City University of New York -New York City Technical College Long Island University - Brooklyn Campus Marymount Manhattan Mercy College-Bronx Nyack College School of Visual Arts	
North Carolina	None	Shaw University for the 2001-02 School Year (Designations for the 2002-03 school year will be made on November 7, 2002.)
Ohio	Central State University Heidelberg College Lake Erie College	None
South Carolina	Benedict College Coker College Erskine College Wofford College	None
Tennessee	Freed-Hardeman University	Crichton College Fisk University LeMoyne-Owen College
Texas	Jarvis Christian College	Wiley College

Source: Title II Data Collection—State Reports, 2002.